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Original Communications.

*ANTITHERMIC MEDICAMENTS CONSIDERED AS SEDATIVES OF THE NERVOUS SYSTEM.**

By Professor Dujardin-Beaumetz, Paris, France.

GENTLEMEN:—I think that we may fitly characterize the age in which we live as one in which great advances in the healing art have been made. Every day brings to light some new discovery in therapeutics, and while the value of human life goes on increasing, we are continually put in possession of new and precious means of mitigating the infirmities and lessening the physical discomforts of human existence.

In previous lectures delivered during the scholastic year 1884–85, I studied with you the antithermic treatment and the new agents just coming into use for the reduction of fever temperature. To-day I am going to speak to you of another still newer antifebrile remedy, but shall not repeat the general considerations concerning the antithermic medication presented in my former course,† and I have nothing to alter of what I then said. I wish only to call your attention to a property of

* A lecture delivered in Cochin Hospital, and designed as an appendix to "New Medications." From advance sheets.

† See Therapeutic Gazette, vol. for 1885, p. 577.

these antithermic medicaments which has but recently been brought to light, and which is destined, perhaps, to render more service to therapeutics than that even of lowering the bodily temperature.

When I studied the physiological properties of the new antithermics, I brought before you an interesting fact that a certain number of these medicines act, not by lowering the febrile combustions, as was at first believed, but by a direct and special influence upon the thermic centres of the spinal cord. It is this special action which has suggested the idea of utilizing these antipyretics in affections of the nervous system which are independent of fever, and clinical experimenters have been gratified by the results which have been obtained along this line of investigation.

Salicylic acid has taken its place among the analgesics, and has been employed with success in neuralgias and even in tabes dorsalis. The same may be said of antipyrin, and it may be affirmed that this substance is almost the peer of salicylic acid in the treatment of acute rheumatism, and without possessing the disadvantages of the latter. But it is particularly to antifebrin or acetanilide that I desire to call your attention, and it is with the consideration of this new therapeutic agent that I shall begin what I have to say to-day.

Acetanilide is a substance which has been long known, but has hitherto possessed only a chemical interest, not having entered the domain of medicine. Its discovery was due to Gerhardt in 1835, who obtained it by the reaction of chloride of acetyl on phenylamine. It was only last year that the attention of physicians was attracted to this product of the laboratory, and it is to Cahn and Hepp, assistants at the clinic of Kussmaul, of Strasbourg, that the merit belongs of having for the first time studied the antithermic action of acetanilide, to which they gave the name of antifebrin. For my part I am disposed to repudiate the name of antifebrin as being ill chosen, and as indicating, as we shall see, only the least important property of this product, and I shall use in preference the name of acetanilide, which was given to it by Gerhardt, and which has the advantage of expressing its chemical composition.

A short time after the first clinical trials were made, Prof. Lépine, of Lyons, studied in detail the physiological and clinical properties of this medicament. After having ascertained by experiments on animals the action of this substance on the temperature, on the circulation, on the elements of the blood, and on the nervous system, Lépine employed acetanilide in apyretic diseases, and it is to him that the honor belongs of having found that this new medicine is not only powerfully antithermic, but also a most useful nervine.

I have myself, in my hospital service, made interesting experiments, which you have many of you witnessed. The results of my clinical observations and of researches made in my laboratory have been recorded in the inaugural theses of two of my pupils, Weill and Arturo-Reyes y Sardiña, and these are the results which I am going to present to you to-day.*

Acetanilide, as it is found in commerce to-day, is a substance of a beautiful pearly-white color, very crystallizable. When carefully purified, it has no odor, and possesses a slightly pungent taste, which is not disagreeable; hence patients take it readily. It is very slightly soluble in water, and this would be a great drawback to giving it in solution were it not for the fact that it dissolves in alcohol with great readiness.

The mode of preparation of acetanilide is very simple. All you have to do is to act upon aniline with glacial acetic acid, and before this medicament became an industrial product we used to make it constantly in our laboratory. I need not take up your time with the details of the process, which you will find described at length in the theses of Weill and Reyes.

The chemical study of acetanilide was made in a very thorough manner in Germany by Menschutkine,† in 1882, and this chemist has shown that in order to obtain acetanilide in a state of purity it is necessary always to employ an excess of acetic acid. This fact has had an important practical consequence, leading to an increase of the supply and a fall in the price, which has now gone down to ten francs per kilogramme, and I need not tell you that the cost of a drug is an element which is always to be taken into account when its administration is to be long-continued.

From a chemical point of view, the constitution of acetaniline may be interpreted in the following way. This substance has for its formula C_8H_9NO. It may be considered

* *Vide* Weill, "On Acetanilide" (Thèse de Paris, 1887); Arturo-Reyes y Sardiña, "Contribution to the Physiological and Therapeutical Effects of Acetanilide on the Nervous System," 1887.

† Menschutkine, *Journ. de Pharmacie*, May 15, 1887, p. 520.

as composed of aniline in which one atom of hydrogen has been replaced by the radical acetyl :

$C_6H_5N\{^{H}_{H}$ Aniline. $\qquad C_6H_5N\{^{H}_{C_2H_3O\ (acetyl)}$ Acetanilide.

Now, aniline itself may be regarded as ammonia in which one atom of hydrogen is replaced by the radical phenyl, C_6H_5, and from this point of view acetanilide may be considered as an ammoniacal compound, in which two atoms of hydrogen have been replaced, the one by the radical phenyl, the other by the radical acetyl :

$N\{^{H}_{H}_{H}$ Ammonia. $\qquad N\{^{H}_{C_2H_3O\ (acetyl)}_{C_6H_5\ (phenyl)}$ Acetanilide.

In other words, we might apply to it the name of *phenyl-acetamide.*

When employed as a medicine, acetanilide, I need not tell you, ought to be perfectly pure. All impurities which the aniline of commerce may contain ought especially to be eliminated. The following are the characters which, according to Yvon, should belong to medicinal acetanilide :

1. It should possess no odor.
2. It should be perfectly white.
3. Heated on a platinum foil, it should give a colorless liquid.
4. When thus heated, it should be entirely volatilized, leaving no residue.
5. It ought not to give with hypobromite of sodium an orange-yellow precipitate.

This last reaction, which is very delicate, is obtained whenever acetanilide retains any traces of free aniline.

Acetanilide is always of easy administration. It may be given in capsules or in solution. Water being, as I have told you, an improper vehicle, it may be given in wine, to which it does not communicate any disagreeable taste. One may employ to advantage the following formula :

℞ Acetanilide, 5 parts;
Simple elixir (or elixir of Garus), 170 parts. M.
A tablespoonful contains 50 c.g. (7½ grs.) of the medicament.

The doses may vary from 25 centigrammes to 3 grammes in the twenty-four hours, but whatever may be the daily quantity prescribed, it must not be given in one full dose, but in several small doses of 50 centigrammes or more, administered at regular intervals during the day. By giving the entire amount in one dose you would run the risk of witnessing collapse and cyanosis.

Let us first study the physiological action of acetanilide. In weak doses (*i.e.*, 2 to 4 centigrammes per kilogramme of the animal's weight) acetanilide has little perceptible action on man or animal in the physiological state. When administered in subcutaneous injection to hares and guinea-pigs, or introduced by means of the œsophageal sound, it produces no disturbance, no depression of the temperature.

Weill himself took four grammes of acetanilide in wine, and the result of the experiment was negative. The temperature, taken every quarter of an hour, remained stationary, and the tracings of the pulse after and before the dose indicated no modification.

In larger doses (25 to 50 centigrammes per kilogramme of the animal) acetanilide is toxic, and the animal is completely overcome. There is marked stupor and prostration ; movements become difficult and hesitating ; the temperature falls steadily. The respiration is first slowed, then it loses its regular rhythm, stopping at certain moments, and immediately after becoming tumultuous and precipitate. At this period collapse generally sets in. The animal loses all feeling ; if you pinch, prick, or burn any part the reaction is feeble and incomplete ; to the analgesia succeed anæsthesia and death. Generally death does not supervene rapidly, the absorption of acetanilide being ordinarily delayed from twenty-four to thirty-six hours.

This fact is to be borne in mind, for it seems to show that acetanilide is not by itself a true poison, but that it acts probably as a toxic by robbing the blood little by little of certain principles indispensable to calorification, causing thus a progressive refrigeration which is incompatible with life. This fact seems proved by the researches of Lépine and Weill, which have shown that if you will leave animals poisoned by acetanilide in a warm place you will enable them to recover from the effects of the toxic agent.

The changes in the blood are very important to note. In our experiments on animals, we have remarked a considerable diminution in the quantity of the oxyhæmoglobin. Thus in hares we once saw the hæmoglobin fall from 12.5 per 1000, the normal figure, to 5.5 per 1000, when death ensued. The spectroscopic examination of the blood reveals important changes in the optical composition. According to Lépine and Aubert, there is seen in the spectrum of the blood of animals

poisoned by acetanilide a characteristic ray between C and D, indicating the presence of methæmoglobin. To sum up, the principal alterations of the blood are the marked diminution of the oxyhæmoglobin at the same time that methæmoglobin appears. Quite recently Henocque has studied anew this action of acetanilide on hæmoglobin, and has shown that this agent diminishes the quantity of oxyhæmoglobin as well as the activity of the exchanges.

Despite the sensitive reactions which acetanilide presents, it is impossible to discover the least trace of this substance in the urine of patients to whom it has been administered. It is not then eliminated in substance, and in the present state of our knowledge we can only conjecture as to how it is eliminated.

Acetanilide is almost entirely devoid of antiseptic properties. It has been studied from this point of view by Miquel, director of the micrographic service at the meteorological observatory of Montsouris. According to his experiments, one may incorporate considerable quantities of acetanilide with culture-liquids without impeding or retarding the development of atmospheric bacteria there vegetating.

W. come now to the therapeutic applications. As an antithermic, acetanilide is a medicament of but moderate energy, which depresses the temperature by acting on the nervous system and on the respiratory power of the blood. Moreover, its antithermic action is unequal; in small doses we have seen it both produce and fail to produce a considerable thermic fall. Moreover, it frequently causes cyanosis. Acetanilide, then, has shown itself to be very much inferior to antipyrin as an antithermic, and it decidedly resembles phenic acid in its physiological action. Therefore, for my part, I opine that acetanilide, like phenic acid, ought to be discarded as an antipyretic. But as a nervine medicament, acetanilide is a precious acquisition to therapeutics, and from this point of view the experiments undertaken by Prof. Charcot in his hospital service are in perfect accordance with my own.

I must assure you first of the complete innocuousness of acetanilide in affections which are not febrile, while in febrile maladies, and particularly in typhoid fever, this same medicine, even when given in small (½-gramme) doses, is liable to produce cyanosis, and may depress the temperature three degrees or more, as I saw in one case. Administered in conditions of apyrexia, however, it may be taken in much larger doses without producing any appreciable physiological effect. Nevertheless, while in certain patients acetanilide in doses of 2 grammes a day continued even for months produces no manifest physiological effect, in others, on the contrary, the same daily quantity, though given in fractional doses of only ½ gramme, causes a well-marked cyanosis; but this cyanosis does not appear to be harmful. It has been impossible thus far to explain this difference of action, which seems to depend on the activity, greater or less, of the gaseous exchanges in the blood.

In patients not febricitant, and who are good subjects for this medicament on account of its agreeing well with them, no cyanosis or other unpleasant symptom resulting, these are the therapeutic results which we have obtained. I have combated by acetanilide three orders of phenomena,—the element of pain in general, then the special pains of locomotor ataxia, and lastly epilepsy.

In reference to its influence on pains in general, acetanilide has shown itself to be inferior to aconitine in the treatment of facial neuralgia; but when the pains in the head are linked to nerve-alterations, as, for instance, in certain cases of neuritis of the nerves of the orbit, acetanilide has been found superior to every other medicament. I may cite in this connection the instance of a patient suffering from most intense cephalic and periorbital pains, which completely disappeared with the administration of a gramme and a half of acetanilide. These pains had resisted for months full doses of aconite, bromide, and iodide of potassium. I have also obtained good results from acetanilide in the treatment of rheumatic, muscular, neuralgic, and even articular pains, and in these cases this medicament seems superior to salicylic acid, not so much by its general effects, as because it never gives rise to the cerebral disturbances which salicylic acid occasions.

Dr. Demiéville, of Lausanne, in a communication read at the meeting of the Vaudois Medical Society, has given an interesting study of acetanilide as a nervine medicament, which completely confirms my own researches.* He has shown that the abatement of pain begins to be felt a very short time after the administration of the medicament, the relief being frequently experienced in the course of a quarter of an hour. Generally, however, the pain does not entirely disappear

* "On Antifebrin as a Nervine" (*Revue Méd. de la Suisse Romande*, June 15, 1887, p. 305).

till an hour or two after the medicine has been taken. Moreover, acetanilide, according to this authority, has very marked somniferous qualities, and, as a consequence of its administration, there is not only the cessation of painful symptoms but also a strong desire for sleep. Demiéville has administered acetanilide chiefly in sciatica, in intercostal and other neuralgias, and has obtained excellent results.

But it is in the lightning pains of locomotor ataxia, so varying in their manifestations, that acetanilide renders us special service. You can see in our wards several patients affected with tabes dorsalis, who used to suffer continually from the painful crises so common in this affection, and who have been completely relieved by the employment of this medicament. Dr. Signé, in his inaugural thesis, written under the direction of Prof. Grasset, of Montpellier, has mentioned cases similar to my own.

In a certain number of patients the effect of this medicament is lasting,—that is to say, the pains disappear as long as the use of the medicine is continued, to return when the effects of the latter have passed off; but it must be borne in mind that in most cases the amelioration is but transient. After having for a fortnight or so obtained marked benefit, the acetanilide fails any longer to relieve them. This is what has happened to one of our patients, who is suffering from dorsal tabes with hyperæsthesia of the cord, which dooms him to a most painful form of spinal epilepsy. For fifteen days these painful symptoms, which had resisted all previous treatment, yielded to acetanilide, but since then, despite an increase of the dose from one and a half to three grammes a day, no further benefit could be obtained.

Making all due allowance for disappointments and failures, this new remedy has proved of great utility in this disease, and we have another valuable means of combating the pain which is so prominent and persistent a symptom. Of course we have no pretension to cure dorsal tabes, but what we can affirm is that the *douleurs fulgurantes* are often amenable to acetanilide. Fischer has also noted this sedative action on the nervous system in ten ataxic patients to whom he administered acetanilide. Only one failed to derive relief, while all the others were signally benefited.

I consider this fact as of great moment, for heretofore, apart from hypodermics of morphine, the disadvantages of which you know, and which so soon lose their effect, therapeutic art has been but meagrely provided with anodyne medicaments.

It remains for me to speak of epilepsy in this connection. To enrich therapeutics with a medicine capable of curing this frightful malady would be to render a precious service to humanity, and it must be confessed that, apart from bromide of potassium, which, despite its drawbacks and shortcomings, still remains the best means that we have of treating this disease, our therapeutic arsenal is very poor in really active remedies. I have administered acetanilide for epileptic fits, but the small number of successful cases which I have observed does not warrant me in drawing formal conclusions. In one case, however, I obtained results which were really demonstrative. The case was that of a child, 12 years of age, of respectable intelligence, who for a year had been subject to epileptic fits which were very characteristic, and had been observed by Drs. Gilles and Stackler. We agreed, on consultation, to put this child on the bromide treatment, but having been obliged steadily to increase the doses up to eight and ten grammes a day, we soon had symptoms of bromism, which obliged us to suspend the treatment. I then ordered acetanilide in the dose of ½ gramme three times a day. This treatment has now been continued for three months, and there has been no repetition of the fits. Never before since the onset of the disease has there been so long an exemption from the convulsive crises.

Lépine has also observed cases of epilepsy where acetanilide has had a favorable influence. But I must confess that since I have made a general use of this medicament in the treatment of epilepsy, I have had more failures than successes. The cases observed in the service of Prof. Jolly, of Strasbourg, and reported by Salm, and those noted by Faure in the service of Dr. Denis at the Infirmary of Bicêtre, have shown that in the greater number of cases of epilepsy, acetanilide has been found to be without efficacy. It is, then, a medicine on which we cannot reckon as an anti-epileptic.

I must now speak to you about the analgesic action of antipyrin. In previous lectures I have dwelt on the influence of this medicament on the temperature of febricitants. I shall not return to this subject, having nothing new to add, antipyrin remaining still one of our best antithermics, but I wish to call your attention to a new and very important property of this medicament.

From the date of the first applications of

antipyrin to therapeutics, it has been employed in the treatment of rheumatism, and since early in 1884 Alexander has noticed its good effects in calming the articular pains. These observations have been confirmed by Demme, Demuth, Masius, Bernheim, Lenhartz, Neumann, Clement, Blanchard, Moncorvo, Fraenkel, etc. Then, in consequence of its proved analgesic action in this disease, it was employed in other painful affections, and two years ago it was recommended by Khomiakoff and Livoff in migraine, while last year White and Sprimont, in their turn, found it to be of utility in hemicrania. But we are indebted to Prof. Sée, in recent communications to the Academy of Sciences, for the most striking demonstration of the analgesic properties of antipyrin.*

Prof. Sée was desirous of ascertaining by experiments on animals how antipyrin could bring about the cessation of pain. In operating on dogs he noted the following phenomena:

1. A very notable diminution in the general sensibility, and a real analgesia in the member which received the injection of the remedy, sometimes also in the opposite limb.

2. The electrical excitation of the sciatic nerve in the animal under antipyrin produces only a very feeble reflex contraction, indicating the enfeeblement of the sensory perceptivity and reflex activity of the spinal cord.

Chouppe, moreover, has arrived at similar conclusions by a different path. By a series of experiments, which he has communicated to the Society of Biology, he has shown that if in dogs you inject what would ordinarily be fatal doses of hydrochlorate of strychnine, after having introduced into their system a certain quantity of antipyrin, not only does the animal survive, but you do not even always provoke strychninism. It seems, then, demonstrated by this that antipyrin appreciably modifies the reflex power of the spinal cord.

In acute rheumatism, antipyrin may take its place by the side of salicylate of sodium. Sometimes, even, it is found to be superior to the latter, and under its influence we have seen attacks of rheumatism subside which had resisted the salicylate combined with local revulsion. Ordinarily, the fluxion and pain in the joint have yielded at the end of several days, and have not returned. It is certain that the action of antipyrin in acute rheumatism of the joints is neither more intense nor more rapid than that of sodium salicylate. It, however, has the advantage over the latter of not giving rise to the cerebral troubles sometimes caused by the sodium salt. The dose of antipyrin in rheumatism varies from 4 to 6 grammes (℥i to ℥iss) in the twenty-four hours, and in these doses (1 gramme every four to six hours) we witness cessation of the pain, without the supervention of any cardiac or renal troubles.

Drs. Bernheim, of the faculty of Nancy, and Simon, alumnus of the same faculty, have published an important work on the employment of antipyrin in the divers forms of articular rheumatism. Their numerous and interesting observations accord with the facts which I have myself observed in my hospital service, and they have obtained excellent results from antipyrin without any unfavorable accompaniment, unless it be a slight nausea in some patients.

But it is especially in the nervous troubles of the sensibility that antipyrin does good. All the neuralgias are tributary to its action, and you will obtain the best effects in sciatic and facial neuralgias. Under the influence of a small dose of 2 grammes one will often see these atrocious pains rapidly disappear.

Migraine may also be cured by antipyrin, which has proved to be certainly the best remedy which we possess for this painful disease. Administered at the onset of the paroxysm, it has considerably diminished the intensity of the latter, and if it is given as soon as the first premonitory symptoms make their appearance, it is pretty sure to abort the attack. In any event, it always brings marked relief, and the number of failures is relatively small. The medium dose of antipyrin to administer in migraine varies from 1 gramme to 1½ grammes. Antipyrin will also allay the lightning pains of tabes dorsalis; and here it may be affirmed that it is superior to acetanilide, for it is more certain than the latter, and has none of its drawbacks. It does not produce cyanosis, and its effects on the system are not so soon worn out.

* Alexander, *Centralb. f. Klin. Med.*, No. 33, 1884; Demme, *Forschritt der Med.*, No. 24, 1884; Demuth, *Aertyliches Intelligentzblatt*, December, 1884; Masius, *Bull. de l'Acad. de Méd. Belgique*, t. ix., No. 1, 1885; Bernheim, *Revue Médicale de l'Est*, April 15, 1885; Lenhartz, *Charité Annalen*, Bd. x., 1885; Neumann, *Berlin. Klin. Woch.*, No. 37, September 14, 1885; Blanchard, *Revue Méd. de la Suisse Romande*, May, 1886; Clement, *Lyon Méd.*, August 29, 1886; Moncorvo, Paris, 1886; Fraenkel, *Soc. de Méd. Interne de Berlin*, October 18, 1886; Livoff, *Vratch*, No. 5, 1885; White, *N. Y. Med. Record*, September 11, 1886; Sprimont, *Med. Obozen*, No. 23, 1886; G. Sée, "On Antipyrin as an Analgesic," *Acad. des Sc.*, April 18, 1887.

There is, lastly, according to Professor Sée, a group of painful affections which are equally amenable to antipyrin. I refer to the pains of angina pectoris accompanying certain diseases of the heart, especially those of the aorta and coronary arteries. These thoracic and cardiac pains may disappear like magic after the administration of a few gramme doses of antipyrin.

The solubility of antipyrin renders its administration easy, and you can give it in capsules or in solution. If you choose the latter form, you should remember that antipyrin has a disagreeable taste. Therefore, in order to disguise this taste, you can flavor your solution with some of the aromatic essences, or give it with simple elixir or rum. Germain Sée advises to administer the dose of antipyrin in a tablespoonful of water, then to wash down the dose with a few mouthfuls of kirsch or toddy. You may then direct your patient to take 1 gramme of antipyrin, and repeat this dose from two to six times a day, giving in this way from one-half an English drachm to a drachm and a half in the twenty-four hours. These doses have no unpleasant effect, unless it be at times to produce a scarlatiniform eruption, which soon passes away. It is necessary to continue the administration of the medicine for a full week, especially if you have to do with rheumatic manifestations.

The remarkable solubility of antipyrin has led to another mode of its introduction. I refer to the subcutaneous method. In his communication* made to the institute the 11th of July last, Germain Sée has shown that we may in a great many cases substitute antipyrin for morphine. Since the introduction of antipyrin into therapeutics numerous physicians had employed antipyrin in subcutaneous injections, and in my own hospital service I had made numerous trials of the same kind, but they all had for their end the production of an antithermic effect. Dr. Lébert, however, has been in the habit for more than a year of employing these injections for various neuralgias.†

The observations of Germain Sée are most conclusive, and you will find the principal of them recorded in the thesis of his pupil, Dr. Caravias.‡ These subcutaneous injections are made with strong solutions, consisting of one-half gramme of antipyrin in precisely the same weight of water for one injection, and these injections may be repeated from two to four times in the twenty-four hours. The subcutaneous injections are well borne. At the same time, so concentrated a solution may at times be somewhat painful. To avoid, therefore, any local irritant action, you can make your solution more dilute and employ the following formula:

℞ Antipyrin, grammes v;
Water, grammes x;

and inject, as before, a syringeful of this solution. If you use this formula, you will have to multiply your injections in order to obtain the effect desired.

In the subcutaneous use of antipyrin as a remedy for pain a real progress has been effected, and we cannot too much felicitate ourselves on the advantages accruing from this discovery, not the least of which is that we can now substitute for hypodermics of morphine, so fraught with peril in many cases because leading to morphiomania, medicaments quite as active, which are unattended with danger.

It remains to say a few words about salol, on which I am now experimenting in my hospital. Salol is, as you know, a white substance, possessing an odor which reminds you somewhat of bitter almonds. It is chemically produced by the combination of salicylic acid with phenic acid. It is also a member of the aromatic series which has already furnished us so many medicaments. Salol was introduced into therapeutics by Dr. Sahli, who made it the subject of a communication to the Society of Medicine of Basle, and shortly afterwards it was studied by Prof. Lépine, whose researches inspired the thesis of Montange, which was approved at Lyons in January, 1887. The difficulty in the administration of salol consists in its insolubility, which renders almost impossible the preparation of a homogeneous mixture. It is well, therefore, always to give salol in emulsion, which may be made with the tincture of quillaya saponaria, or with mucilage and syrup.

What should be the doses of salol? The experiments made in my laboratory by Dubief show that this substance has no toxic properties, and that one may administer to hares considerable quantities, amounting to 2.50 grammes per kilogramme of the animal's weight, without producing any other symptom than a momentary fall of the temperature, a result which shows that salol possesses, like all its congeners, antithermic properties. You

* Germain Sée, *Acad. des Sciences*, July 11, 1887.

† Lébert, "Subcutaneous Injections of Antipyrin for Pain," *Concours Méd.*, July 30, 1887.

‡ Caravias, Thèse de Paris, 1887.

will then prescribe salol in gramme doses every three to six hours, so that from four to eight grammes may be taken during the twenty-four hours, and you will give the medicine in capsules, which is practically the best mode of administration.

Salol is also a nervine medicament. It allays nervous irritability in acute articular rheumatism, but our experiments seem to prove that it is less efficacious than salicylate of sodium, while it is chiefly in the lightning pains of tabes dorsalis that this medicament has rendered us real service. In relieving these patients it enables them to sleep, and to forget for some hours their sufferings. I will add that, like acetanilide, salol is not an antiseptic, and that, according to the researches of Miquel, it does not prevent bacteria from developing in culture-broths to which large doses are added.

As you see, it is still to this series of aromatic bodies that we owe these new medicaments, and there is reason to think that the properties which we have studied belong to this entire group of substances, and that the future has in reserve for us yet more valuable discoveries.

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*A FEW PRACTICAL NOTES ON THE USE OF SALICYLATE OF AMMONIUM, APOMORPHINE, SODIO-SALICYLATE OF CAFFEINE, IODOL, AND RESORCIN.**

By Oscar A. Fliesburg, M.D., Hudson, Wis.

AMMONIUM salicylate has for the last three or four years received some attention from the therapeutist, and deservedly so. My object in this paper is to bring out a few practical hints on its use. I will not speak about the theories, etc., why this salt ought and should be used in preference to any other ammonium salt or salicylic acid salt in the treatment of fevers. I will only cite the remarks made by Dr. J. R. Burnett, of Neenah, Wis., in a paper read before the Wisconsin State Medical Society at their meeting in 1886, and afterwards appearing in the *Journal of the American Medical Association*, page 654 and following. He says, "But I also ventured upon a radical departure from the outset. I also reasoned that the rational remedy must be ammon. salicyl., for reasons which need be only alluded to. Its germicidal properties, possessed in common by all salicylates, and its antipyretic and antiseptic powers, would at least give promise of effectiveness in modifying if not aborting the course of fevers. It would certainly avail in hyperpyrexia; it ought to fortify against systemic contaminations from intestinal ulcerations; and whether or not it were to be decomposed in the body, and thus produce a nascent carbonate, it should, in common with all ammonium compounds, serve as a stimulant, which could be strengthened at will by addition of ammonia in excess." I coincide with Dr. Burnett entirely in the first part of this citation, but I take reservation to the latter part of the sentence, inasmuch as Dr. Albert Robin has shown that the salicylates, benzoates, cinnamates, etc., are carried away by the urine in the form of salicylurates and hippurates, those compounds forming by, or rather reducing with, those acids —viz., salicylic, benzoic, cinnamic—combining with some nitrogenous compound, such as glycocol, and giving up in the act of combining a part of its oxygen. But be this as it may, the fact stands undisputed and proven that we, in salicylate of ammonium, possess a sure remedy to reduce temperature, and by its germicidal and antiseptic properties able to abort and shorten the zymotic diseases. I have for some years past been in the habit of prescribing salicylic acid in the treatment of pneumonia (lobar or croupous, lobular or bronchial), in simple and capillary bronchitis, and also to a certain extent in typhoid, but still more in fevers of the puerperium, and never have I had reason to regret this step from the trodden path. In later years I have always prescribed ammonium salicylate as the best form to give it in those fevers, leaving the sodium salicylate to fevers of a rheumatic type. In a paper read before this Society at their last meeting in Eau Claire, I spoke about this salt and apomorphine in the treatment of pneumonia and bronchitis in children in the following words: "I now bring forward the salicylate of ammonium and apomorphine for their intrinsic value not only as expectorants and reducers of temperature, but also for their constitutional and antiseptic properties, and still more as solvents for fibrin and serous fibrin. If M. Robin's theory on fevers is correct, then we cannot in the whole range of antipyretics find a more efficient heat-reducer than ammonium salicylate." I am now more than ever convinced of the truth of this statement. The formula which I have employed has been one part acid to two parts carbonate of ammonium. This leaves a free excess of carbonate of ammonium, but I have not con-

* Read before the Interstate Medical Association at their meeting in Hudson, July 12, 1887.

sidered this a drawback. I always have it prepared in the nascent or fresh state. The dose I have employed has ranged from 5 centigrammes (¾ gr.) to an infant to 1 gramme (15 grs.) or more to an adult, to be repeated as need be every hour or two. I have with those doses been able to reduce temperature in a short time from 105° or 106° to 99° or 100°, and by repeated doses at longer intervals been able to keep the temperature down at that point. At the same time my cases have progressed without much other medication to a favorable end in a shorter time, and with less distress to the patient than by older methods. I have very little inclination to cite cases. I will only say that for the last year I have used it in every case of pneumonia, bronchitis, and croup I have met in children, and in nearly all cases in adults, and always with the same result,—a short uninterrupted course of the disease to the better. From such results I cannot speak too highly of the drug, or use too laudatory words for its use. My time is rather limited to prepare an elaborate paper on the subject, and therefore I hope this will be sufficient to induce some of you gentlemen present to use this preparation in your practice, and that you then will unquestionably be as pleased with its exhibition as I have been.

Apomorphine.—We all know and the most of us have used this therapeutical agent for its emetic effect, but my purpose to-day is not to speak about it as a stomach-revolutionizer or an emesis-producer, but it is to call your attention to this drug in the capacity of an expectorant. For the last three years I have used apomorphine in every case of capillary bronchitis and membranous croup I have met. I must, without exaggerating, have used it upwards of one hundred and fifty times. Whenever I have had the misfortune to meet a case of capillary bronchitis, my habit has been to prescribe alternately a salicylate of ammonium mixture and powders containing apomorphine, the dose varying according to age from 1 milligramme to 2 milligrammes every one, two, or three hours, as urgency of the case demanded. I have always found it to act very promptly, producing an easy expectoration of the thick, tenacious phlegm, which otherwise so often strangles and chokes the unfortunate little sufferer in his futile endeavors to rid himself of this sticky stuff. It produces a watery exudate in the bronchi and bronchioles, which again thins the tenacious phlegm, and in this way makes it easy for the patient to raise this otherwise murdering substance. It also by this transudation bathes the inflamed surfaces with a non-irritating fluid. It carries away the surplus blood from the arterioles by compressing the lumen of the same, and by this action gives the inflamed surfaces a chance to recover from their hyperæmic state. I do not know of any one having earnestly recommended apomorphine as an expectorant with sufficient data to claim its use as such, Rossbach, who has lately recommended it in combination with morphine, perhaps excepted: he recommends it in chronic bronchitis in adults. Bartholow speaks of it only, "that it has been used, but with too few data to insure its safety." Stillé and Maisch say "it may be used in chronic laryngeal troubles." Wood, to be sure, in his "Therapeutics," says "that Dr. Jurasz commends it as an expectorant, and that he is confirmed by several observers, among them Dr. Werthner,"—who, indeed, seems to be the only one who has used it in this capacity and observed the same effects which I claim for it,—namely, in the early stage, in a few days at the highest, it changes the thick, viscid mucus into a thin, easily-raised fluid; to quiet the excessive cough; and to act as a heart-sedative. But I must sound a tocsin, a warning-bell to toll emphatically against the excessive doses recommended by Wood and said to be employed by Werthner. Wood gives the dose as $\frac{1}{15}$ to $\frac{1}{7}$ of a grain (0.07—0.15 grain) every two hours, and the double amount to an adult. Now, these are, indeed, very dangerous doses, and cannot but bring the remedy into disrepute on account of the necessarily following depressant symptoms bordering on collapse. We know the emetic effect is produced by $\frac{1}{8}$ to $\frac{1}{4}$ gr., and here Dr. Werthner recommends the nearly identical dose as an expectorant. The largest dose I ever administered as an expectorant has been $\frac{1}{20}$ gr. (3 milligrammes) to a child 4 years old; it was exhibited every two hours. I thought afterwards that I never would give it in so large a dose, as the depressant effect was too great. Still, I am sure I have seen just the effects Dr. Werthner claims for it. For this reason I cannot enough warn you to not use excessive doses of this drug,—which I value so highly, and which is capable of doing so much for our little sufferers in time of need,—and thereby become prejudiced against it, all on account of a rash and indiscriminate use of the same. The diseases in which I have found it most valuable are acute suffocative catarrh and true croup. I again refer you to my paper read at the last meeting in Eau Claire, where

I have more fully detailed the use of this most valuable drug.

Sodio-Salicylate Caffeine.—Last year or the year before my attention was called to this salt in some German journal. I afterwards saw it mentioned in the *American Druggist*. It struck me at once that this combination should be particularly useful in certain cases of heart-disease,—for instance, in endocarditis of a rheumatic type, or in pericarditis with effusion, or in acute endocarditis. I therefore had a druggist, Mr. Johnson, of this place, prepare a sample for me. I have now employed it in a few instances.

CASE I.—Mary K., domestic, æt. 16, endocarditis rheumatica, chlorotic, strumous; had been giving salicylic acid for polyarthritis, also salicine in combination with digitalis and nux vomica; rheumatic trouble better, but no improvement of heart-trouble. She had also been taking tr. citro chlor. ferri. Put her on sodio-salicylate caffeine, 0.15 gramme four times a day; improvement from beginning of exhibition of drug; well in fourteen days; heart-murmurs and valvular sounds normal. For chlorosis gave her at the same time pil. Blaudii.

CASE II.—James M. D., millwright, æt. 36, endo- and pericarditis rheumatica. Had a subacute attack of inflammatory rheumatism in beginning of winter, leaving him with this complication. Put him on 0.20-gramme doses four times a day; steady improvement from beginning of exhibition; no other treatment used.

CASE III.—Mrs. P., æt. 32, chronic endocarditis following rheumatism, aortic and mitral insufficiency, pericarditis, congestion of left lung from pressure, anæmia; gave her sodio-salicylate caffeine, 0.10 gramme four to six times a day; quite a good deal of improvement; was when treatment first commenced unable to move around; in a few weeks went to Chicago, and there, through exposure having an acute attack, came under Prof. Davis, Jr.'s, treatment.

CASE IV.—Mrs. T., æt. 33, neuralgia migraine, pain over præcordia, uterine troubles; has had unbearable pains in head and over heart; was put upon 0.20 gramme three times a day when migraine and pain over heart was bad, otherwise morning and night; steady improvement from exhibition of drug.

These cases are the most important I have notes of; have given it a few more times, but have no notes. Of course these few cases are entirely too small in amount to form an opinion from; still, as they have given me good results I can recommend it for further trial.

The mode of preparing is not very complicated, and I will append the formula Mr. Johnson has been using. The Germans seem to use not only the salicylic double salt, but also the double salts of benzoic and cinnamic acids, and those can be prepared in the same manner as this, only substituting the respective acids instead of salicylic:

℞ Caffeine (pure), 50 grammes;
Acid salicylic, 32 grammes;
Hydrate soda,
Distilled water, āā q. s;
Salicyl. soda, enough to make 100 grammes.

Heat the caffeine in a capsule (porcelain) with about six hundred and fifty grammes distilled water, add the salicylic acid till dissolved; then add the solution of caustic soda till nearly neutral; leave it slightly acid; it will even be better to preserve a portion of the acid solution, so if the remainder should be alkaline it can be corrected; evaporate the neutralized solution on water-bath to a granular powder; then powder to an impalpable substance, and to this add enough salicyl. soda to make one hundred grammes by weight.

Iodol.—Tetraiodopyrrol.—This substance has of late claimed some attention from therapeutic writers as a substitute for and as superior to iodoform as an antiseptic. If it is superior I do not know; that it is equal to iodoform in many respects I do know. I have used it in about a dozen cases of ulcers of the rectum and erosions of the uterine cervix and indolent ulcers of the leg,—cases where I formerly always employed iodoform. In all those cases the iodol has acted fully as well, and, it seems to me, even better than iodoform. If it will serve me as well in the future as it hitherto has, I shall again report on the subject. Iodol is a yellowish-brown impalpable powder, without smell or taste, insoluble in water, but easily decomposed by light and organic substances. It then gives off the pyrrol, and free iodine will be the result, somewhat similar in this respect to iodoform,—the percentage of iodine is about the same, or ninety-two per cent. in the one and ninety-five per cent. in the other. Its greatest merit lies in its being odorless and nontoxicant, also being very light and impalpable. I see some German authors claim good results from it in the treatment of laryngeal phthisis and epithelioma. From my experience I should be inclined to think it valuable in those affections.

Resorcin.—This preparation, which now has been in use for several years, belongs to the phenol group, and is prepared by fusing caustic soda or potash with galbanum, assafœtida, or gum ammoniac, afterwards extracting and subliming. It is mostly prepared synthetically from several substances. It has been recommended as an antiseptic, antipyretic, and antifermentative. It was originally introduced as a remedy for cystitis and chronic gonorrhœa. I have for years been using it in the treatment of cystitis, both locally and internally; in both ways it has served me well. For chronic cystitis, used as a topical application in strength of ten per cent. to twenty per cent. solution, it sometimes succeeds when other measures fail. In gonorrhœa I have never used it. But I want to call your attention to its use in cholera infantum, in which I have found it exceedingly valuable. Believing, as I do, that the summer diarrhœa of infants and children always is caused by errors in diet or by changes produced by the excessive heat,—this change mostly consisting in fermentative processes,—I vainly looked about for a good antifermentative which at the same time it would stop the formation of the ferments would not be too irritant to the inflamed surfaces of the stomach, and at the same time act as an antipyretic; at last my thoughts concentrated upon resorcin, and for the last three years I have constantly been using it. It has served me well: after only giving a few doses of it the discharges will be nearly entirely odorless, the stomach will regain its wonted strength. The doses I have employed have varied from 3 centigrammes to 50 or more for an adult. In adults I have mainly employed it for fermentative dyspepsia,—*i.e.*, gaseous or flatulent dyspepsia (indigestion). I have also employed it in pertussis on the recommendation of a Brazilian physician, Dr. Freire, I believe. I have used it in the form of a spray, the strength varying from five per cent. to twenty per cent.,—the spray to be faithfully applied every two or three hours, according to frequency of coughing attacks. By the use of those sprays I have been able to cut short every attack of pertussis, and often in two or three days abort this disease, which otherwise runs a course of weeks. I cannot too highly recommend it, especially as it is rather pleasant in its taste, being sweetish, and soothing in its effect. I also think that in resorcin we have a remedy for the bugbear "rose fever," hay fever, summer coryza, or what it may be called. In a spray of thirty per cent. to fifty per cent. solution applied two or three times a day I have found it of great service. But where resorcin will be and is of greatest utility is in the treatment of infantile eczema of a chronic type, with hard, scaly eruptions, indurated base, and highly-inflamed surrounding tissue, with a violet or dark-red color, showing that the true dermis (vera) is at fault. In those cases I can confidently assure you, gentlemen, that a few applications of a salve consisting of resorcin, oxide of zinc (equal parts), and cold cream (ten parts) will soon bring on a change, causing the eruption to dry up and heal, the inflamed tissues to assume a natural color. Sometimes it will be necessary to use nitrate of silver solution in addition, to be applied a few times, always previous to the application of the salve. This solution should be rather strong, one or two or three grammes to thirty grammes. It will also be found of great service in the treatment of all other scaly eczemas of a chronic type. In the acute type it is of very little service. It is of value in the treatment of psoriasis, prurigo, eczema barbæ, acne rosaceæ, and other skin-diseases of the same character.

SIERRA SALVIA, OR ROCKY MOUNTAIN SAGE.

By A. Comstock, M.D., Westcliffe, Col.

THE readers of the Gazette may recall an article printed in this magazine about six years ago relating to the same topic as given above. I then had personally met this plant and observed it for about one year, and was impressed with its value as a therapeutic aid. After the interval of half a dozen years in experience and inquiry I am more inclined to urge the profession to test its virtues than when I knew less of it. This humble plant naturally would attract but little comment from the laity, and has no history in the literature of the land of its habitat. In fact, it shares the fate of nearly every detail of botany in the same region, chiefly, I doubt not, because most people who have passed over this section have been either too indolent or otherwise too occupied to give the leisure required; and further, but a few years have passed since most of the area producing this growth has been released from the native Indian or Mexican. The traditions of those who for centuries have hunted over these plains and mountain-slopes connects the sage

referred to with a long list of local diseases. It is not improbable from all I can learn that it had a high place with several generations of the race we call the American Indian, if not with the Aztecs, the Toltecs, the Moyas, and Ouiches, when they extended a type of civilization over these parts of a better sort than has ever been known since the days of Uxmal and Aunhoc. Any one passing over the plain, after leaving the Missouri River towards the mountains, on any of the central lines of railway travel may have observed a pale-green tuft of leaves, persistently covering part of the dry belt, at almost any elevation from four thousand to eight thousand feet above sea-level. It does not flourish in the rainless belt, but better in the region which secures a rainfall of not less than a dozen inches. The rich pale green is perennial, and after a slight fall of snow has melted it exhibits a gloss of rare beauty in lustre. The plant is perennial, and this appearance is a sequel to the winter blasts which have denuded it of its season's bloom, or what is left from the cropping of the antelope or cattle or sheep when fodder is short. If protection is furnished by fencing, and when the sun reaches its northern June limit, one of these bunches, not larger than the palm of the hand, sends up shoots, if fairly well nourished, a dozen in number, and to a height of fifteen to seventeen inches. The root does not penetrate beneath the surface much beyond half a dozen inches as a tap, and, like the buffalo- (or bison-) grass which it accompanies, must retain a vitality almost anhydrous for some months of the year.

The portion used is the superstructure, which ripens during the latter part of August, but must be gathered for medicinal use in the early stage of bloom, and just as soon as the pale-yellow shade tinges the pollen. The arrangement of the flowers on the stem is of a class known as "indeterminate inflorescence," and of the racemose type. If poorly nourished, it becomes purely and classically a raceme; but under more favorable conditions (say along the margin of an irrigating ditch, or a freshly-made mining prospect) it develops to the more fruitful panicle. The leaf is crenated and fascicled, but not pointed or spicate, nor supplied with silica, but soft as plush. Small bractlets shoot out in rapid succession with the first summer showers, alternate, and about three-fourths of an inch apart, till near the apex, where they are not one-fourth distant. The little green globules expand at the distal part and form a cotyliform receptacle for the pistils and stamens. The seed, when ripened, resembles that of a grass named after Mr. "Timothy" Hanson (who introduced about a century since the specimen to England, where it is known as the "cat's-tail grass"), and well known in this country. I have counted fifty seeds in a cup, and between three and four thousand cups from a single root, or about two hundred thousand seeds in grass.

The maladies incident to the region where the plant is found are such as would be natural to expect from the sudden changes from hot to cold, due to conditions so clearly defined and illustrated in the report of Prof. Langley upon high altitudes. A clear sky is overcast with dense clouds, and an evening shower follows which may depress the thermometer from 90° to 50° F. in an hour's time, and hence one exposed and overtaken while riding will suffer from an abrupt and almost complete suppression of the offices of the skin. As a result the kidneys may suffer, or the lungs, or what is here termed the "mountain fever," which uncomplicated involves the upper spine, when the cord is congested in the region of the cervical ganglia, extending perhaps through the entire tract. The chill announcing it is a signal for an active system of relief or a long and tedious convalescence. Whilst quinine was formerly used and seems to be indicated, the dry skin and high temperature with cerebral congestion is best allayed by an infusion of the mountain sage. Other animals than man appreciate it, and in the coldest portions of the year antelope, deer, and even grouse are fond of securing its tonic effect, and will consume of it so freely that late in winter their tissues are flavored with it.

From personal experiment and observation in many climates, from the range to coast, for several years I find it the most effective single ally in cases of periodic fever, rheumatic or neuralgic affections, the exanthemata, diphtheria, and kidney-troubles of the type where a diaphoretic or diuretic is required, of any named in the entire list of materia medica products. If taken hot, it at once affects the capillaries, as would be expected from the office of the stomach in digestion, and a free diaphoresis follows. When used cold, it acts upon the kidney in from three to five hours, and often in one-half this time. It should be taken freely diluted, and quite unlike the former teachings in that respect. In wineglassful portions, and as often as three times per hour till full effects are induced, and with

no prescribed amount, is now my custom. Not more than three-fourths to one-half a drachm of the bloom to a pint of boiling water, and steeped as cautiously as the most delicate cup of tea, or till the fibres settle to the bottom of the china bowl (for no metal should be used), when it is ready for use, and may be taken not as a medicine, but as freely as the patient be inclined, always after retiring to get the best results for action on the skin and to quiet nervous irritation. I am also fond of using the infusion as the basis of a lemonade, if acid is indicated, sweetened, etc., to taste. For a tonic and taken cold, it may be taken in less quantity, say a wineglassful, as the Germans use the hot or cold water for gastric irrigation. In the latter case it may be used stronger, and of late Messrs. Parke, Davis & Co., Detroit, have put up a fluid extract which concentrates the elements in a very neat form. I used to advise a proportion which I am now convinced is too strong, and find about one-half a fluidrachm will be tolerated and act best when diluted with a full pint of hot water and allowed to cool, being meanwhile covered so that none shall volatilize by way of steam. If, however, the infusion from the herb be preferred, do not spoil it by making it too strong, and always prepare fresh every day. For the cases indicated it is not improbable that, when patiently tested, it will become as much a staple as the cinchona preparations of South America, the cloves of South Africa, or the rheum of Asiatic India and China.

CURIOSITIES OF THERAPEUTICS.

By G Archie Stockwell, M.D., F.Z.S.,
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IV. MYSTICAL AND CELESTIAL MEDICINE.

THE belief and teachings regarding a Supreme Intelligence as inculcated within the secret and sacred precincts of the Mysteries, had marked influence upon scientific development and progress. Since the Supreme was the source of All, only by the various paths of knowledge could be reached the "narrow gate" opening upon the "straightened way" leading unto "Perfection."* The educational world at this time was purely scientific: the miraculous was deemed the refuge of timid, inconsequent, and vulgar minds: and it was recognized that all things were governed by laws in which accident and chance had no part. But with the decline of knowledge, it being a mystical and caste privilege, the Truth was buried with the secrets of the Colleges, or survived merely as esotericisms and enigmas, the key to which was soon lost; consequently the exoteric in form of vulgar superstitions chiefly obtained.

The twelve degrees or schools of the Colleges were progressively educative, the ultimate goal being the utmost familiarity with *Matter*, or what is now generally understood by "Life" and "Nature." *Matter* was defined as the *Supreme in verity*,—"that from which all things originate, past, present, and future; that which is without beginning or end; and that to which all things must ultimately return,"—a subtle intangible Ether or Essence, all-permeant and permeable, eternal in existence, omnipotent in power, incontrovertible and everlasting as to fact, without which *nothing* is possible.

The "Nebular Hypothesis" of the present was better known and more completely elaborated in the past.† It was taught that from the Essence the four *Principles* or *Elements* resolved themselves, whence was derived *Form:* and Form with the Essence superimposed gave *Life*, and Intelligence proportional to the relationships subsequently established by development and cultivation, said relationships being capable of stimulation. Intelligence might be strengthened by absorption from the Supreme direct, or indirectly through and at the expense of the Elemental. Life, though essentially and physiologically considered as a part of the elemental and corporeal, in that it is dependent upon the ability of the

* This was the language of the *Mysteries;* and here is found the meaning of the utterance recorded by Matthew (vii. 14), "*For narrow is the gate and straightened the way that leadeth unto Life; and few be they that find it.*" The word that is translated "*destruction*" in the subsequent passage, more properly would be rendered ignorance or oblivion. The *Proverbs* of Solomon are especially interesting in this connection, as not only embodying many of the tenets and esotericisms of the *Mysteries*, but as being the best specimen of Mystical language and teaching extant.

† "The world moves," but after all only in a circle. Strange as it may seem, scientific belief regarding organic life,—the molecular theory of Faraday, philosophy of Kant, Schopenhauer, Mac Vicar, Huefland, Crookes, Spencer, etc.,—as formulated by the most advanced thought of the present age, all tend towards the goal apparently reached by the Mysteries more than thirty centuries agone The "universal ether," "ambient fluid," "vital principle," "electro-magnetico-intellectual-divine fluid" of various authors, one and all appear as forms of the Supreme Intelligence as defined by the ancient philosophers.

latter to support it, and the latter in turn dependent upon it for continuance, is yet in some sense a unit as a separate and separable intangible *immediate* of the Derivative and superimposed upon the *remote*.* All things save the One are self-limited: each has its rise, fastigium, and decay; and in consonance with this law of the Supreme, corporeal existence is transitory. When the body by process of exhaustion, natural or otherwise, is no longer able to support the Essence, Death follows, when the latter returns to the Original, and the former completes the disintegrating process that resolves it again into the Elemental; and when the Mundane has also accomplished its fastigium, and is again resolved into *Matter*,—*i.e.*, returned to the Supreme,—the body and spirit unite, in that both are merged into the Great Intelligence. This is the origin of the doctrines of the *soul*, of *future state of existence*, of a *resurrection*, etc., that, with the decay of knowledge subsequent upon the perversion and subsidence of Mystical teaching, developed from vulgar exotericisms.

Again, the phenomena involved in œstruation, menstruation, ovulation, and reproduction of the species, manifestly were thoroughly understood in all their psychical and physiological relations. The oldest Egyptian, Hindu, and Chinese records define menstruation or ovulation as the preparation of a germ for the reception of independent life; conception as the sequel to physical conjunction of the two sexes, during which each psychically parts with a portion of its individual essence, whereby is accomplished the vitalization of the germ; gestation is the cultivation and development of the envitalization; and parturition is merely the sequel to such development. In the *Soo-Wan* of Hoangti, written forty-five centuriés since, Man is described as a little microcosm, or universe in miniature, and a derivative of the Universal Supreme: and to this lesser microcosm is extended the operation of the *yang* and the *yin*, or, in other words, the *male* and *female* principle existing in the Supreme Essence or Intelligence. This is a near approach to modern theories enunciated at instance of the advanced scientific thought of the present hour embodying the doctrine of Matter and Nature: and inasmuch as everywhere throughout the sphere of living organism certain sexual characteristics presented themselves, the idea represented by the principles indicated as *yang* and *yin* is much more in accordance with the phenomena of living things than that enunciated by Aristotle, which has so long been generally accepted.

The great secret of the higher Mysteries—the graduation of Perfection, so to speak—followed upon an education that developed to the utmost, *psychical power* and rendering such amenable to the individual will. In other words, it was occultation with the Supreme! This was possible only by most thorough and perfect familiarity with, and comprehension of, the secrets of Nature, the relation of natural phenomena and laws by series one to another, and the application of the power of thought-concentration and mental isolation to the production of biologic conditions, such as we are now pleased to term ecstasy, catalepsy, etc. Simple ecstasy, however, was recognized merely as a delusion, or a neurosis, the physiology of which was probably well understood. The clairvoyance of the ecstatic alone was a source of common error, in that it was *not* a sequel to "*Perfection*," but provoked by influences the reverse of will-abnegation and mental isolation: hence "false prophecy" and "false prophets." The higher Mysteries, however, inculcated a profound self-induced and isolated biologic condition beyond the reach of outside will and of human or mundane influence,—a form of catalepsy in fact, whereby the Essence of the individual was supposed to separate itself from the body and become merged into the Supreme or Universal Essence,—and after being enlightened and purified by this mergence it *might* again be returned to reanimate its mortal clay. This is probably the true meaning of the passage in Genesis that describes Enoch† as "walking with God" ("*moving within the Supreme*," literally), and who subsequently "was not"; he united the Essence of his individuality (soul) with the Supreme Intelli-

* See page 664, foot-note regarding *Trinity*.

† Enoch, or *Cân-ock*, the "Initiated," is perhaps identical with the High Pontiff of Mayax, *Cay* the son of *Can-Ah-dama*. In one instance, as has elsewhere been noted (see THERAPEUTIC GAZETTE, August, 1887, p. 539, Appendix K), his head is depicted along with the heads of Coh and Moo, swinging from the belt of his brother Aac, yet there is no proof *he* was murdered, though the records of the deaths of the other two are unmistakable. Considerable space of time must have elapsed between the tragic demise of the unfortunate Coh and the equally tragical death of his "royal wife and sister," and the accounts of their funerals do not favor mutilation other than was customary to prepare the corpses for incineration and visceral embalmment. I opine the representation of Aac with the heads of Cay, Moo, and Coh at his belt, and their flayed bodies at his feet, typifies usurpation of their properties and powers merely.

gence, but it failed to return and revivify the body.*

The *first birth* was the sequel of the development of the maternal germ upon the reception of Life from and through the parents, and the Essence thus derived was necessarily tainted and weakened by mortality. But by mergence and unity with the Supreme, a *new* or *second birth* was accorded, since the Essence was now derived from the Great Intelligence direct, and practically a part thereof. This makes clear the esoteric language of the founder of Christianity, when expressing surprise and rebuke to Nicodemus:

"Verily, verily, I say unto you, Except a man be born anew he cannot see the kingdom of God. . . . That which is of flesh is *flesh;* and that which is born of the Spirit is *spirit.* Marvel not that I say unto thee, Ye must be born anew. The Spirit breatheth" (or *wind bloweth*, as it is commonly translated) "where it listeth, and thou hearest the voice thereof" (or, *art cognizant of its presence*), "but knowest not whence it cometh or whither it goeth. So is every one that is of the Spirit."—John iii.

Again, Nicodemus inquires, "How can these things be?"—a passage that in the original is far from implying the total ignorance of Mystical regeneration it is made to do by modern translators. As one of the Sanhedrim, and a "teacher of Israel," Nicodemus must needs have been in some degree *Mystai.* But whether insufficiently advanced to properly comprehend all that was implied, or imbued with the scepticism that arose from Roman interference and engraftment, it is impossible to determine. He inquires, rather, *why* such phenomena should exist, and is thereupon promptly rebuked, and referred to the proper source of knowledge,—the Mysteries themselves,—by the words, "Art *thou* a teacher of Israel and understand not these things!" The sentence implies reproach and contempt alike that one of such nominal standing should have ignored the opportunities open to him. Remember that Christ was educated in Egypt and a graduate probably of Memphis! Moses was his prototype! And, like the great lawgiver, he abhorred the ignorance in which his people revelled, and sought to lift them from the slough into which they had fallen, and to a knowledge of higher and better things. His aims, his standards, his teachings, all were Mosaic, and consequently *Mystical.* Forbidden to openly reveal the secrets of the Colleges, he took refuge in esotericism,—in parables. Little wonder he incurred the displeasure of the priesthood, since they were alike the exponents of mystical teaching, and the head of the political faction that grasped at power for the few and at the expense of the many; and for years the political branch of the Levitical brotherhood had played fast and loose not only with their own, but the surrounding nations. To them the integrity of the Jewish kingdom was nothing if not accompanied with personal power and aggrandizement. The Mysteries had long lost their purity and truth in Palestine, in that, as in Rome, they were prostituted to improper ends,—individual purposes and political power. Manifestly it was to this prostitution no less than the general degeneracy of the Hebraic race that the "son of Mary" referred when he declared it to be "easier for a camel to go through the eye of a needle than for a rich man to enter the kingdom of God,"—*i.e.*, be united with the Supreme;† and on various occasions he bewailed the general moral and mental apathy of the times, when, with faith broken down under the powerful mental and physical strain to which he had been subjected, he was forced to acknowledge his inability to stem the popular tide.‡

Whether the cataleptic or biologic condition first imposed upon the candidate for Perfection as part of his initiation into the highest Mystery was brought about by the *Mystai*, or self-imposed, is open to some speculation. Probably it was purely voluntary. Other initiations, however, embodied an applied ecstasy, since the accounts thereof that appear in the Apocalypse, the Books of "Daniel," the Books of "Enoch," the "Popul-Vuh," etc., imply both visionary and actual occurrences so intermingled as to be incapable of separation in the mind of the neophyte. "*Perfection*" itself, however, was a self-imposed condition, since otherwise there could be no unity with Supreme; and "*Ultimate Perfection*" was final dissolution,—Death!§

The Masters (Mac or Ephori) in the Perfection of the Mysteries, as the result of education, were well skilled in the production of mental and psychical phenomena and the means of nerve-abnegation and control; the teaching and practice was self-concentration of will and segregation of thought whereby

* See account of Enoch in foot-note to page 529, THERAPEUTIC GAZETTE for August, 1887.

† Matthew xix. 24; Mark x. 25; Luke xviii. 25.

‡ Matthew xxiii. 13–39; Luke xiii. 34, 35; xix. 41.

§ Luke xiii. 32, "Go ye and tell that fox: Behold, I cast out devils, and I do cures to-day and to-morrow, and the third I shall be *perfected*."

the Essence (soul) was merged in the Supreme wholly untrammelled by mortality, and whereby true conceptions were had of futurity and space: thus was obtained *prophecy*. It was believed that according to the condition of this Essence or soul at the moment of occultation, so was the result. If the mind was *pure*—*i.e.*, freed from all mundane considerations at the moment of emergence,—and the will of the individual self segregated and voluntarily given to the Supreme, the occultation would be perfect and true; but the impure and trammelled soul must fail of Perfection, and the result consequently be misleading.—Just as two fluids of unlike specific gravity are unable to mingle, so a soul handicapped by mundane influences could not be perfectly merged into the Supreme: and as it must go out to the Great Intelligence impure, so it returned attended by the same earthly error. If pure, it came back imbued with new life and spirituality.*

That knowledge of the higher biologic condition was deemed direct communication with the Supreme is frequently evidenced by the sacred writings of the Hebrews, and constant allusions therein to the "*Spirit of God*" descending upon the "prophets"—*Mac.* These were men of the higher Mysteries, mentally "Perfected,"—that is to say, capable of segregating the mental from the physical. "False prophets," on the contrary, were those possessing knowledge of the *ecstatic* condition, which they mistakenly deemed the higher and *complete* form of *mergence*. By the expert this false catalepsy was defined as the "inharmonious action and relation of the individual *Essence* within itself." Mergence, on the contrary, was harmony of the *individual* with the *Supernal!* Death was permanent harmony, though not complete until the body, which resolves itself into the four original elements, shall be returned to the Essence by reabsorption.

The doctrine of *sin* appears to have arisen from the theory that the *pure* and the *impure* cannot mingle,† hence it was believed that impure Essences were segregated at Death, or under attempted emanation, yet retained their individuality until such impurities were lost. Meantime they were forced to wander in expiation, ever in the midst of (perhaps in absolute contact with) the Supreme, but tortured by inability to resolve themselves. An impure soul having vainly attempted Perfection, since it could not be improved, must needs become worse, since it is not within the province of anything to stand still; and this is the key to the passage regarding "seven other spirits more evil than himself," and the "last state of that man is worse than the first."‡ Non-mergence and inability to *Perfect*, whether temporary or final, was also typified as "*outer darkness.*"

The earliest history of civilized man reveals the prevalence of the doctrine of emanation, and it is easy to surmise its development from and through the Mysticisms of Primitivism.§ It was inculcated by the most ancient Maya, Egyptian, Chaldean, Chinese, and Hindu authorities; it was taught by Zoroaster and Mahomet, and is the doctrine of the Lama Buddhists; it is also the foundation of the Vedas, which declare, "In truth there is but one Deity, the Supreme Spirit, and of Him is the *nature and soul of man.*" Again, the Vedas, like the Institutes of Menu, affirm the soul to be an emanation of the All-Pervading Intellect, and that, since the latter alone of all the Universe is stable, the soul is necessarily destined to be reabsorbed: further is added, this Essence is without form and visible nature, and with all its beauties and harmonies, is merely the shadow of the Supreme.‖

From Vedaism was derived modern Buddhism, the faith of a majority of the human race, that defines a Supreme Being as a part of the Supreme Intelligence: this is the earliest form of anthropomorphosis, and the beginning, doubtless, of the Trinity.¶ It contemplates the existence of an Essential influence that may, if you please, be termed *Force*, giving rise to *Matter*,** and also suggests a soul

* Luke x. 22, 24; xi. 34, 35; xiii. 21, 24.

† Luke xi. 24, "When the unclean spirit is gone out of a man, he walketh through dry places, seeking rest and finding none. He saith, I will return unto my dwelling *whence I came out*," etc.

‡ Luke xi. 26.

§ See THERAPEUTIC GAZETTE for April and May, 1887.

‖ THERAPEUTIC GAZETTE, April, 1887, p. 229; Draper's "Conflict of Religion and Science," p. 132.

¶ I opine the real key to the Trinitarian Doctrine is something as follows. The Essence is triune in that it is the *Derivative* (Tha, or in the Greek *Patha*, translated "father"); the Product (or son of itself); and the Animative (spirit) of all things: truly, the "*Three are One!*" When Christ declares he is "of the Father" (*Patha*) and the "Father of me," he speaks esoterically of higher Mystical knowledge, and refers to his own "*New Birth.*"

** In the burning taper the disciple of Buddha sees the effigy of Man: an embodiment of Matter as the sequel to the evolution of Force. If interrogated as to the destiny of the soul he demands, What has become of the flame when extinguished? What was its condition before it was called into existence, before the taper was lighted? Was it nonentity? Was it derived from nothing? Has it been assimilated? See Draper's "Conflict," p. 122.

personality that deludes man throughout his mundane existence, and that is not necessarily extinguished by Death, but perhaps may be lost by progressive stages or degrees. On this latter, too, is founded the theory of transmigration.* Ultimately, however, reunion with the Supreme will follow, when *Nirwana*, or Perfection, will be reached, and oblivion obtained :—a state or condition that has no relation to space or time,—the state into which the flame disappears when extinguished,—that in which Man was before he appeared on the earth and while without individuality, and before the earth even had been called into existence! This is the end all ought to hope for,—viz., reabsorption into the Supreme and Divine Intellect, whereby is obtained perfect mergence and "*eternal rest.*"

These ideas openly obtained among the higher minds of Europe up to the sixteenth century, when they were partially suppressed by ecclesiastical authority. They did not die, however, but merely slept, to rise and assert themselves anew and more boldly in this present century. In the third century Plotonius taught emanation unchallenged, for the Mystical doctrines were not altogether forgotten. From the Alexandrian Greeks the Saracen philosophers derived it anew, and soon after the capture of the art and literary metropolis of Egypt and the world, the educated Moslems abandoned to the lower and vulgar orders the anthropomorphic ideas of Nature and the Supreme, and the simulachral form of the soul.† A native of Britain, John Erigena, A.D. 800, also taught that every living thing must necessarily proceed from something that had before possessed existence.‡ The visible world, being a world of life, has therefore necessarily emanated from some primordial existence, and that existence is the Supreme itself, who is thus the originator and conservator of all. Whatever is visible to the eye is also maintained by force derived from and as a part of the Supreme, and were that force and supremacy withdrawn it would instantaneously vanish. Erigena thus conceives Deity as an incessant participator in *all* existence, being the upholder, preserver, and derivant, answering to the "soul of the world" expressed by the Greeks. The *particular* life of individuals is, therefore, a part of *general* existence,—that is, of the Essence or "mundane soul," which is the key to the sympathy existing—though perhaps obscurely to mortal minds—between different individuals, and also widely different classes of life. If the maintaining power is withdrawn, or the body is no longer capable of sustaining it, the former must return to the source whence it was derived to be reabsorbed therein. All visible Nature must thus revert to the Supreme at last. "The death of the flesh is the auspices of the restitution of things and of a return to their ancient conservation. So sounds revert back to the air in which they were born, and by which they were maintained, and they are heard no more; no man knows what has become of them. In that final absorption which, after a lapse of time, must necessarily ensue, the Supreme will be All in All, and nothing exist but in It alone."§

* See page 669.

† As Arabism developed into a distinct scientific system, the theory of emanation and absorption became one of its most characteristic features. In thus abandoning vulgar Islamism, the example of the Jews no doubt contributed, for they had exchanged the anthropomorphic being, whose home was behind the veil of the Temple, for an infinite Intelligence, pervading universal space, avowing their inability to conceive of anything which, suddenly and abruptly called into existence, should possess attributes of immortality: they affirmed the soul of man must needs be connected with that which had neither beginning nor end if its immortality was unquestionable! So, too, to-day we find progressive Hebrews in the foremost ranks of scientists, and deriding the anthropomorphic Jehovah of the orthodox Jew.

"In the intellectual history of Arabism the Jew and the Saracen are continually found together. It was the same in their political history, whether considered in Syria, Egypt, or Spain. From these conjointly Western Europe derived the philosophical ideas past and present,—ideas that soon culminated in Aveoroism. Aveoroism is philosophical Islamism; and though we are accustomed to regard Aveorois as the author of these heresies, and the orthodox have so branded him, in truth he was merely a collector, compiler, and commentator of the tenets originally promulgated by the Mysteries. His works invaded Christendom by two routes,—*via* Southern France from Saracenic Andalusia, whence they reached Italy, engendering numerous heresies by the way; and from Sicily *via* Naples, being introduced under the auspices of Frederic II." (Draper's "Conflict of Religion and Science," p. 124.)

‡ John Erigena adopted and taught the philosophy of Aristotle, and indulged in the hope of uniting religion and philosophy in the manner proposed by Christian Ecclesiastics, who were then studying in the Saracenic Universities of Spain. Anastasius, in a letter to Charles the Bold, expresses his astonishment how so "barbarous a man, coming from the very ends of the earth (Britain), and remote from human conversation, should comprehend things so clearly, and transfer them into another language so well!" The general drift of his works was philosophic, but his treatment of such subjects in connection with religion brought him under the ban of the Romish Church, and, after undergoing severe personal censure, many of his books were condemned to the flames.

§ "I contemplate Him as the beginning and cause of all things: all things that are, and those that have been,

Again, Al-Gazzali (A.D. 1010), the most powerful of Saracenic philosophers, wrote: "God has exalted the spirit of man out of a drop of his own light: its destiny is to return to Him. Do not deceive yourself with the vain imagination it will die when the body dies. The form you had upon your entrance into this world and your present form are not the same; hence there is no necessity of your perishing on account of the perishing of your body. Your spirit came into this world a stranger: it is only sojourning in its temporary home. From the trials and tempests of this troublesome life our refuge is God. In reunion with Him we shall find eternal rest,—a rest without sorrow, a joy without pain, a strength without infirmity, a knowledge without a doubt, a tranquil yet ecstatic vision of the source of life and light and glory, the source from whence we came."*

So silently and extensively have these ideas been developed by the education and scientific progress of our time, that it was deemed expedient in the Papal Syllabus to draw them into open light, and that, too, in the most conspicuous manner. Accordingly, the last Œcumenical, or Council of the Vatican, aiming to throttle, or at least upset, a tendency so obnoxious and dangerous to the tenets of the Romish Church, in an equally prominent and signal manner promulgated among the first of its canons, an anathema of all who dared hold such advanced views.†

There was a broad gulf between the *Masters, Mac*, or more advanced of the Mystai, and those who were merely cognizant of the lesser Mysteries, and also between the latter and the great masses of humanity. This was the result on one side of imperfect education, on the other of total and abject ignorance, and in part also of an esotericism that was deemed essential *per se*. This is the secret of discoveries and expressions belonging to the same ages and eras that apparently inculcate conflicting ideas; and it is ever the fault of humanity that it judges of the impressionable rather than the real, whereby history is made up of the details of individuals rather than of the race as a whole of which they were merely factors. Thus, too, popular delusions are accepted as creeds, or as the sequence of laws that in reality are contrary and inimical to such de-

but now are not, were created from Him, and by Him, and in Him. I also view Him as the end and intransgressible term of all things. . . . There is a fourfold conception of universal nature,—two views of divine nature, an origin and an end; two also of framed nature, cause and effects. There is nothing eternal but God." (Erigena's "De Divisione Naturæ.")

* "It was in India that men first recognized the fact that Force is indestructible and eternal (see page 662). This implies more or less distinct ideas of that which we now term *force correlation* and *force conservation*. Considerations connected with the stability of the Universe give strength to this view, since it is clear that were there either increase or diminution the order of the world must cease. The definite and invariable amount of energy in the Universe must therefore be accepted as a scientific fact. The changes we witness are *in its distributions*. But, since the soul must be regarded as an active principle, to call a new one into existence out of nothing is necessarily to add to the *force* previously in the world. And if this has been done in the case of every individual who has been born, and is to be repeated for every individual hereafter, the totality of *force* must be constantly increasing. Moreover, to many very devout persons there is something most revolting in the suggestion that the Almighty is a servitor to the lusts and caprices of man, and that, at a certain time after its origin, it is necessary for him to create for the embryo a soul. Considering man as composed of two factors, a body and a soul, the obvious relation of the former may cast much light on the mysterious, the obscure, relations of the latter. Now the substance of which the body consists is obtained from the general mass of matter around us, and after death to that general mass it is restored. Has nature, then, displayed before our eyes in the origin, mutations, and destiny of the material part, the body, a revelation that may guide us to a knowledge of the origin and destiny of its companion, the spiritual part, or the soul?" (Draper's "Conflict of Religion and Science," p. 127.)

† "Let him be anathema—who denies the one and true God, Creator, and Lord of all things, visible and invisible: who unblushingly affirms that beside matter nothing else exists: who says that the substance or essence of God and of all things is one and the same: who says that finite things, both corporeal and spiritual, or at least spiritual things, are emanations of divine substance; or that the divine essence by manifestation or development of itself, becomes all things: who shall say that man can and ought to, of his own efforts, by means of constant progress, arrive at last at the possession of truth or goodness: who shall refuse to receive, for sacred and canonical, the books of the Holy Scriptures in their integrity, with all their parts, according as they were enumerated by the holy Council of Trent, or shall deny they are inspired by God: who shall say that human reason is in such wise independent, that faith cannot be demanded of it by God: who shall say that divine revelation cannot be rendered credible by external evidences: who shall say that no miracles can be wrought, or that they can never be known with certainty, and that the divine origin of Christianity cannot be proved by them: who shall say that divine revelation includes no mysteries, but that all the dogmas of faith may be understood and demonstrated by reason duly cultivated: who shall say that all human sciences ought to be pursued in such spirit of freedom that one may be allowed to hold as true their assertions even when opposed to revealed doctrine: who shall say that it may at any time come to pass in the progress of science that the doctrines set forth by the Church must be taken in another sense than that in which the Church has ever received and yet receives them!"

lusions. Man, in his great egoism, is unable to conceive of anything higher or more perfect than himself, consequently he measures and judges all things by his own individual limit and standard. To bring the Supreme within the comprehension of the masses, it was found necessary to invoke anthropomorphosis; and thus from the Mâyâ *Thah*, Egyptian *Phtha* or *Kneph*, and the Greek and Chaldean *Pathr*, was evolved the word *Father*, "Creator," or "Engenderer."* The God of the vulgar of this nineteenth century is aptly represented in Watt's hymnology as "seated on a great white throne," and heaven as the court of an absolute monarch, with all the paraphernalia of monarchy, enclosed as a "walled city," the "new Jerusalem:" the scene depicted is the extreme of the vulgar barbaric and Oriental. God differs in no particular from the anthropomorphic *Kneph* of Egypt, *Zeus* of Greece, or *Jupiter* of Rome, since all were taught as "majestic," "awful," "omnipotent," "permeant," and "infinite." It is to the exotericisms of the Mysteries as derived from vulgar sources that we must look for the origin of the Deity of popularism: these exotericisms are the paganisms that were engrafted upon Christianity, and which good Bishop Nestor† combated so vigorously and unsuccessfully. Then, aside from being a false or exoteric creation to serve special and vulgar ends, the error is in part the result of misinterpretation of the Hebrew terms, Elohim (*worshipped*) and Jehovah (*ever-existing*), words that orthographically, and suggestively, possess a *plural* significance. So, too, the sentence in Genesis that is universally rendered, "God created man in his own image," in the original exactly conveys the meaning found in the *Manava-Dharma-Sastra*: "And the subtle spirit Intellectual took possession, making (of man) a part of itself,"—*i.e.*, man was imbued with the Essence, or the Supreme. Moses, to be sure, inculcated an anthropomorphic deity in part, and for reasons obvious to any one who will peruse the Mosaic record: yet careful study reveals something grander, higher, and better behind the veil interposed by him between the higher Mysteries and the knowledge of the impure and vulgar. So, too, men high in the Mysteries were regarded with awe by their immediate inferiors because of their near approach to the Supreme. After occultation, whereby was obtained Perfection, they were *of the Supreme;* hence apotheosis, employed as typical of Perfected purity, easily passed the boundary, whereby individuals were elevated to the rank of deities.‡

Again, the wandering essences of the unperfected after death were supposed to be desirous of re-entering upon mortality in one or another of its forms in order to work out their own purification and expiation, and thus obtain the denied bliss; and such essences might be the cause of error in attempts at occultation by those who were not thoroughly endowed with purity. While some might

* When Christ alludes to his death, the meaning attached to the words "I go to the Father"—Greek, *Pathr*—is quite different from that intended. Again, he declares (Luke xvii. 21), "The kingdom of *Pathr* is within you!" And (John xv. 2), "I am the vine (offshoot) and *Pathr* the husbandman (gatherer) . . . every branch that *beareth not good fruit he purifieth*." When he mentions himself as the "Son" he does so in the same sense as he employs the word *vine*. Finally, it must be remembered his teachings were esoteric; he expressly states this fact, or that they are *parables* (John xvi. 25).

† It will be remembered that the founder of Islam derived his Mystical knowledge, along with the means of procuring and prolonging the extato-biologic condition, from the Nestorians.

‡ Immaculate conceptions and divine descents were currently received by the vulgar both before and after Christ's time, so much so that whoever greatly distinguished himself was thought to be supernaturally endowed. In Rome, even as late as the latter part of the second century, no one would have dared deny the city owed its founder, Romulus, to the accidental meeting of the god Mars with the virgin Rhea Sylvia as she went with her pitcher to the spring. "The Egyptian disciples of Plato," remarks Draper, "would have looked with anger on those who rejected the legend that Perictione, the mother of the great philosopher, was a pure virgin that had suffered an immaculate conception through the influences of Apollo, and that the god had declared to Ariston, to whom she was betrothed, the parentage of the child. While preparations were being made for the final campaign against Darius, Alexander undertook a journey to the temple of Jupiter Ammon, which was situated in an oasis of the Lybian Desert. The oracle declared him to be the son of that god who, under the guise of a serpent, had beguiled Olympias, his mother. Accordingly, when Alexander issued his letters, orders, and decrees, styling himself 'king' and 'son of Jupiter Ammon,' they came to the inhabitants of Syria and Egypt with an authority that now can hardly be realized." That the more educated regarded this as nonsense is evidenced by Olympias, the mother of Alexander, who was accustomed to jest of the matter, declaring she wished her son would cease from incessantly embroiling her with Jupiter's wife. There is not the slightest foundation for presuming the son of Mary, who professed to be an imitator of Moses, ever sought or intended to arrogate to himself divine honors: this was the work of his followers and in accordance with the vulgar custom of the times. He sought only to inculcate the tenets taught by the higher Mysteries; and it will be observed that the educated John and astute Luke are wholly reticent regarding the apotheosis of their Master or Teacher.

imagine they had discovered the means of separating soul and body, as by ecstasy,* unless possessed of the true knowledge (purity) peculiar to the higher Mystai, they were apt to be led astray by these wandering "spirits of evil," and unwittingly, perhaps, exchange souls,—*i.e.*, spiritual identity: this was a prolific source of "false prophecy." It was to preserve the corporeal from such influences—as the vulgar supposed—that it was inhumed, cremated, or placed within the "tower of silence;"† and with like view the Thibetan Buddhists yet condemn the corpses of the poor to be devoured by sacred birds and beasts, while the wealthy, when deemed *articulo mortis*, are assisted out of the world by lifting the scalp and making an opening through the skull, whereby is hastened the escape of the essence, and the body rendered uninhabitable to other essences that may desire to reanimate it.‡

The *Mystai* held disease to be sequel of impression, whereby the harmonious relations of the essence are interrupted. By such inharmony through the medium of the nervous system, morbid changes are induced in the physical.§ The physical or animal portion of the economy is of secondary consideration only, serving only to define an essence,—which, however, is not thereby rendered wholly independent,—a form through which a stream of matter is constantly flowing, receiving supplies from and dismissing wastes into its surroundings, resembling, as Dr. Draper puts it, "a river, cataract, or flame." The particles constituting the physical are inconstant, those present at one instant disappearing the next, its sustenance depending upon the supply. All economies must needs be artificial in nature, since they have not always existed, hence are self-limited, or capable only of three stages,—the rise and development, the acme which encroaches in part upon the other two, and the decay. Nothing stands still in nature, hence when the fastigium is reached, decay with certainty follows, when the vivifying essence returns whence it came, while the body is resolved into the original elements, ultimately to follow its principle. Few modern physiologists, I fancy, will care to dispute these propositions, and they evince greater enlightenment than the world at large, owing to the dogmatic usurpations of theology, has ever been willing to admit. Says Dr. Draper, "In all cases the action of each and every nerve-centre, regardless of its stage, class, or degree of development, depends upon the condition of oxidation. If the supply of arterial blood be for a moment impeded, the nerve mechanism parts with a portion of its power, and becomes more susceptible in its weakness to certain impressions, less so to others: its harmony has been interrupted. If the supply is increased, as when nitrogen monoxide is inhaled, the result obtains as the sequel of more energetic action, and consequently greater nerve waste. This is the necessity that demands sleep and rest as a means of restoring harmony by repair."

* Plotonius, who taught the doctrine of emanation, believed the soul might be united to the Deity by ecstasy alone, thereby obtaining a foretaste of absorption into the Universal Soul. In like manner Porphyry sought union with God, and bewailed his own worthlessness, saying he had been so favored but once in eighty-six years, whereas his master had six times been so united in sixty years.

† The Parsee, or religion of Zoroaster, was originally a mystical monotheism, its aim being moral and intellectual purity and perfection. It teaches the Supreme in all things. The sun, the fire, the light, all are derived from the Supreme, and are typical thereof, and ultimately must return whence they came.

‡ Is not this the probable cause of the holes found in the vertex of the crania of many of the mysterious extinct race of America known as "Platycnemic Men," or "Mound-Builders"? In certain districts explored by the writer, every skull found was thus perforated by at least one opening, five-eighths of an inch in diameter perhaps, and in some instances, though rarely, by two. Such evidence as is at command leads to the belief, moreover, that the openings were made immediately before or immediately following death.

§ It is now well understood that the ganglionic nervous system is automatically impressionable beyond all source of measure or computation: we can only obtain conception thereof by comparison with other objects. For instance, if a wafer be laid upon a piece of highly polished steel, and the latter then be breathed upon, when the moisture has disappeared, and the wafer removed, the most critical scrutiny, even with microscopic aid, fails to discover the trace of any form; but breathe thereon again, and a spectral image of the wafer comes plainly into view, and this may be reproduced for months, even years, after the first (and the result of a single) experiment. This proves how trivial an impression may be registered and preserved by an inorganic substance, and that a shadow never falls without leaving a permanent trace, even though it be beyond the power of human vision to detect. (See Appendix L.) How much more impressionable, then, must needs be the ganglia of vesicular nervous material that are constituted special registering *apparati!* Thought is impression, and there is no such thing as spontaneous self-originated thought, for every intellectual act is the sequel of some preceding act essential thereto; and in the origination of thought there must needs be two distinct conditions,—a state of the organism (1) as dependent upon antecedent impression, and (2) on the existing physical circumstance.

Among the vulgar the primitive belief of the derivative origin of disease from* evil essences, universally obtained, and when these took the form of nervous perturbations, such as mania, epilepsy, etc., by the inferior and vulgar they were deemed direct possession by the evil essences of unresolved persons, who usurped the body and its prerogatives to the expulsion or detriment of the original essence. Unable to comprehend the teachings of the *Mystai*, whose exotericisms even were in some measure esoteric, the material essences of the impure that could not enter supreme bliss (be merged into the Great Intelligence) until after expiation and purification,—perhaps not until earth itself should be resolved, when the essence of the body might meet and mingle with that of the soul,—were anthropomorphized in part, whereby arose the doctrine of devils, evil spirits, demons, wandering genii, etc.† Bearing witness in their own personality of the preponderance of impurity or evil, the masses demanded an anthropomorphic spirit to control the force opposed to the pure; hence Dualism, with Pluto and his prototypes. The domain of Tartarus, given to the latter, in time came to be burdened exoterically with various properties in the way of locality, scenery, and surroundings, calculated to appeal to the fears of the ignorant; and as mundane and political considerations usurped the educational and spiritual in the *Mysteries*, so these superstitions were made to serve the ends and aims of a political majority, who, as they became more degraded, adopted them for themselves. The Hebrew *sheol* ("seeking," or place of seeking), and Greek *hades* and *gehenna*‡ ("shades" and "impurity," referring to the existence of those who were "not in the light"), underwent various transformations, the most elaborate of which, perhaps, is the eighteen-chambered hell of Lamaism, eight of which are freezing cold and ten burning hot.§

(To be continued.)

CARBOLATE OF MERCURY IN SYPHILIS.

Dr. Schadeck has employed carbolate of mercury both internally and hypodermically in syphilis with remarkable success. He gave it in thirty-five cases in the form of a pill without finding it give rise to any gastric disturbance. The formula was,—℞ Hydrargyri carbolici oxydati, ʒiii; pulv. glycyrrh. q. s. ut. f. massa pil. ex qua form. pil. No. 60; from two to four pills daily after food. This preparation was originally used by Gamberini in 1886. Dr. Schadeck also employed the carbolate of mercury in ten cases in the form of hypodermic injections, which he administered in the gluteal region, causing the needle to penetrate the muscles deeply. The liquid used was a mucilage containing two per cent. of carbolate of mercury in suspension. In this way his results were as satisfactory as when the preparation was given by the mouth. —*Lancet*, August 6, 1887.

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* See Therapeutic Gazette, April, 1887, p. 232.

† In the uncertainty as to what becomes of the soul in the interval between its separation from the body and the time it would be again reunited, many different opinions appeared among the unlearned at various different ages. Some thought it hovered over the grave; some that it wandered disconsolate through the air. In the popular belief of Romanism, by an ignorant interpretation of the esotericisms of Matthew xvi. 19, St. Peter sat as a doorkeeper at the gate of heaven, with power to grant or refuse admission at his pleasure. Many were, however, disposed to deny this, since such power would be anticipatory of the judgment, which would thus be rendered needless; consequently after Pope Gregory's time the doctrine of purgatory met with general favor as providing a place for departed spirits. That the spirits of the dead occasionally revisit the living or haunt their former abodes appears to have been a fixed belief in all ages that was by no means confined to the more ignorant. A half-century or century since an enticing pastime was to gather at the fireside of a winter's evening and retail, or listen to, stories of ghosts, apparitions, goblins, etc.; genii are a concomitant of every Eastern tale to this hour, and ghostly narrations are yet common to many Scotch and English hearths. In the old times the Romans had their *lares*, or spirits who had led pure lives, their *larvæ*, or spirits of evil, and *manes*, or those that were of doubtful character. Says Draper, "If human testimony on such subjects can be of any value, there is a body of evidence, reaching from the remotest ages to the present time, as extensive and unimpeachable as is to be found in support of anything whatever, that these shades of the dead congregate near tombstones, or take up their secret abode in the gloomy chambers of dilapidated castles, or walk by moonlight in moody solitude."

‡ The word *Gehenna* was applied to a valley in the mountains a short distance from Jerusalem, where was burned the garbage and refuse of the city,—a sanitary measure. Any one connected with this burning or the removal of garbage was of necessity *impure*, as having been in contact with decaying and effete matters. This valley was designated as typical of extreme impurity. The word "outer darkness" or shades, which is so frequently translated hell, appears in the Apostles' Creed, and has been a matter of puzzle to many, but the words "Christ descended into hell" mean simply his spirit passed into the unknown,—*the shades!*

§ Manifestly, the Lamantic-Buddhistic hell is derived in part from some of the hidden workings of the Mysteries.

The Therapeutic Gazette

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Leading Articles.

THE TREATMENT OF OBESITY.

EVERY physician in large practice in America must occasionally have to treat cases of excessive fat-production, although it seems to us indisputable that this condition is distinctly more infrequent in the United States than in Germany or even England. The poorer people of Germany are, perforce, frugal, but the richer classes seem to us to indulge much more freely in excessive eating and light wine- or beer-drinking than do Americans, whose nervous energy and haste "to get on" cast into the shade gastronomic pursuits. Observation among our German citizens will, we think, also bear this out: Falstaffian paunches being much more frequent among them than among the native-born. Hence it is that whilst in Germany magnificent institutions exist chiefly or solely devoted to the relief of excessive fatness, and "cures" manifold have wide-spread or local reputations, among the Anglo-Saxon millions Bantingism seems to be the only system which has reached the dignity of a baptismal name.

To discuss all the various German systems in detail would be at present a wanton task, wasteful of the time of writer and reader, but some account of those at present most fashionable among our Teutonic brethren will, we think, be interesting to the readers of the THERAPEUTIC GAZETTE. Chief among these systems is that which is known as the "Oertelschen-Kur," or more commonly perhaps as the "Schweninger-Kur." It originated with Professor Oertel himself, who during his early childhood received a severe injury which led to sedentary habits, and finally, in 1875, to a condition of excessive corpulence, in which shortness of breath, marked failure of heart-power, complete inability to make any exertion, and increasing dropsy not only caused complete present disablement for work, but threatened eternal quiet in the near future. Medical treatment, mineral waters, baths, and all the efforts of the most renowned physicians of Munich had ended in failure. Finally, in despair, Professor Oertel devised and essayed the plan at present so much in vogue. By excessive exercise it was attempted to destroy the fat already accumulated, whilst by abstention from water and regulation of the diet the formation of new fat should be prevented. Further, it occurred to the sick man that heart and lungs were in a similar condition with the voluntary muscles, and that therefore cardiac and pulmonic gymnastics were as essential as was general physical labor. Any stout person who has climbed an Alpine steep on a hot August day knows full well the strain, the sweat out-pouring, the heart-thumpings, the breast-heavings which accompany such feats. And therefore to the mountains went our young physician, and after much labor and suffering he was rewarded by a regained health which soon led him to fame.

As is well known to our readers, Bantingism consists, in its essence, of the withdrawal of carbohydrates from the food and the living upon a more or less rigidly exclusive nitrogenous diet. If the views held by most modern physiological chemists be correct, that nitrogenous food is in part so split up in the system that fat is formed from it, it is plain that even by an exclusive nitrogenous diet we do not entirely cut off the supply of fat-material; and yet experience shows that in the great majority of cases under such restriction of diet the fat does disappear usually with great rapidity. The practical question is, however, whether the desired end is best obtained by such rigid dieting, and probably few practitioners who have thoroughly tried the plan

are entirely satisfied with it. It has been accused of producing Bright's disease, and it is certain that the excessive use of nitrogenous food does throw a strain upon the renal organs. The danger is, however, to our thinking, too remote to be of great practical importance, excepting in so far as it should lead the physician to occasionally examine the urine of the dieted patient, and if albumen should appear to change the treatment.

More valid objections are the chilliness and weakness, from which patients often suffer although the albuminous food is allowed in quantity, and the ever-increasing repugnance to meats, which in some cases becomes almost unconquerable. This chilliness and the longing for hydrocarbons seem to be based upon an actual need of the system for fresh hydrocarbon, and Professor Voit affirms that he has seen dogs fed upon an exclusively albuminous diet perish of inanition. Moreover, in some cases of Bantingism the stomach rebels altogether against flesh-digestion, and severe dyspeptic symptoms develop, whilst, if there be any tendency whatever to gout, arthritic symptoms rapidly become severe. As an exclusive, final method that devised by Dr. Harvey for the treatment of the corpulent Banting is, to put it mildly, not finally satisfactory.

A dietetic treatment of corpulence which has been much practised in Germany is that devised by Professor Ebstein, and generally known as the Ebstein method. It is simply a modification of the plan employed by Harvey. Three meals a day are allowed, the whole routine being as follows :

Breakfast.—Two hundred and fifty grammes of tea without sugar or milk ; fifty grammes of white bread, with much butter.

Lunch.—Fatty soup, made from a marrow-bone ; one hundred and twenty to one hundred and eighty grammes of flesh, containing much fat ; some vegetables ; stewed fruit without sugar ; two or three glasses of wine. Later in afternoon, one cup of tea without milk or sugar.

Evening.—One cup of tea without milk or sugar, thirty grammes of bread and butter, one egg, or a piece of fat ham or fat roast meat, or cheese, and fresh fruit ; no alcohol.

As the result of living upon this diet, Ebstein, who was his own first patient, lost in the course of the year eighteen German pounds. He states that the use of the fat produced a sense of satiety, and stilled the thirst and carbon-longing, which are often so severe under Bantingism. The originality of the Ebstein cure seems to consist in the relief of the hydrocarbon appetite by fat. It is largely employed in Germany, and has even been tried with asserted good results upon animals, especially upon the pug-dogs of the German dowagers. Vogel, in Stuttgart, is affirmed to have reduced a dog five hundred and eighty-five grammes in a week by administering daily three pounds of oatmeal, and at first one hundred grammes of fat, increased to one hundred and thirty grammes.

There can be no doubt that the rational treatment of acquired corpulence consists in the regulation of diet and exercise, and that it must be crowned with success if the plan be well devised and carefully carried out. The term *acquired* corpulence is used here advisedly, for there are certain families in which excessive fat-production is so constitutional that the most that can be done is to keep in check an inherited tendency.

The diet-problem when studied naturally divides into four parts : first, the quantity to be allowed ; second, relative amount of flesh, starches, hydrocarbon, and fats ; third, use of water ; fourth, use of alcohol.

Of these problems the last is so easily and plainly solved that it is well to get it out of the way immediately. Alcohol is never necessary to a well-fed, healthy man : it is a pure hydrocarbon, capable of saving fat. Its excessive use, especially in the form of beer, is a common cause of corpulence. Hence theoretically it should be denied entirely to the patient. If, however, the previous habits have been such that it is impossible to stop its use abruptly, it should be as rapidly withdrawn as can be done, and should when given never be in the form of a malt liquor, but of a light wine of such poor quality that the patient can be the more readily weaned from it.

In the great majority of cases it is excessive quantity rather than improper quality of food which causes corpulence, and reduction of the quantity is therefore the first aim of the practitioner. A little book published in England, which has hardly attracted the attention of the profession that it deserves, teaches just here a useful lesson. In this "Advice to Fat People" the anonymous captain of a British regiment states that for thirty-eight years he had been a martyr to obesity. At birth he "was an enormous freak of nature that was clearly intended for twins." At eighteen he weighed eighteen stone. Banting taught that "quantity may fairly be left to the natural appetite, provided the quality is rigidly adhered to." Our captain asserts that quantity is even more important than quality. In about ten months

he reduced his weight one hundred and seven pounds and his girth eighteen inches by closely adhering to the following dietary:

At 6 A.M., one pint of black coffee and one ounce of coarse brown bread or biscuit.

At 9 A.M., four ounces of lean meat, three ounces of brown bread or biscuit, and half a pint of coffee.

At 2 P.M., six ounces lean meat, three ounces brown bread or biscuit, six ounces green vegetables, and half a pint of any fluid, except ale, effervescing wines, or aerated water, followed by half a pint of coffee.

At 6 P.M., half a pint of coffee.

At supper, two ounces brown bread or biscuit, a couple of glasses of sherry or claret.

Our hero further affirms that fruit may be taken *ad libitum*, and that vegetables which grow above ground, such as cauliflowers (except peas, beans, and rice), are good, but those which grow below ground "are fat persons' poison." Liquorice powder is to be taken at bedtime *pro re nata*.

The average amount of food required by the human adult is generally acknowledged by competent authorities to be about as follows:

Albuminous materials.	Fat.	Starchy carbohydrates.
30 drachms.	25 drachms.	92 drachms.

The analysis of the ration allowed Mr. Banting, given by Dr. Carl Zahn, shows that he took daily

Albuminous material.	Fat.	Carbohydrates.
43 drachms.	2 drachms.	5.25 drachms.

whilst the Ebstein ration allowed contains

Albuminous material.	Fat.	Carbohydrates.
25.5 drachms.	21.25 drachms.	11.75 grammes.

It will at once be seen that the Ebstein ration furnishes much less of hydrocarbons to the system than is required for its support, and that the system is, as already stated, only a mild Bantingism. When it comes to the individual case of excessive corpulency, it is to our thinking very clear that no hard and fast rules, either as to diet or exercise, are allowable, but that each patient—his present, his past, his likes and dislikes, constitutional tendencies, etc.—must be carefully studied by the physician, and a special diet list and exercise programme be made out. General directions as to amount of food are sometimes sufficient, but usually will not suffice. To weigh the food and drink may be troublesome, but when the corpulency is very pronounced or very obstinate the scales are a necessity, and the daily ration must be accurately determined. Almost always it will be found that the patient has been eating far beyond the needs of the system. Care should be exercised in immediately reducing the amount, even entirely to the ration laid down as the average one. As the case progresses the standard should be departed from in the direction of increase or diminution, according to the individual needs. To our thinking it should approximate in character that of Ebstein rather than that of Harvey,—*i.e.*, there should be only a moderate reduction of the fats and hydrocarbons below the norm, and only a moderate increase of the nitrogenous food. For the purpose of aiding our readers in arranging a diet list we append the following table, originally compiled by Dr. Zahn, which gives approximately the amount of food material in various common articles of diet:

Food.	Water.	Albumen.	Fat.	Carbohydrates.
Mean of ten different kinds of simple soup	91.	1.1	1.5	5.7
" ten rich soups	83.2	2.6	3.2	9.7
Boiled beef, lean, from young heifer	66.5	28.4	1.3	
" " fat, " " "	49.	38.	12.1	
Beef, steers, and oxen, boiled	56.8	34.2	7.5	0.4
" " " " roasted	59.	38.2	1.7	
Roast meats, including beefsteak, game, birds, etc., reckoned as an average	58.	38.2	2.7	
Veal, roasted	78.	15.3	5.2	
Fricasseed veal, with fat and milk	57.	22.3	10.4	10.
Fat roasted pork or goose	40.	34.6	24.2	
Smoked ham	59.73	25.08	8.11	
Boiled fish	74.20	22.10	0.60	0.70
Shell-fish	80.97	17.09	0.34	
Mean of seven different kinds of meat-foods	44.20	8.70	15.	28.9
Potatoes, roasted	72.40	1.90	3.30	21.20
" as salad	73.	2.10	3.20	21.80
" boiled	70.	1.80	3.10	24.
Salad, green	94.2	1.40	2.	2.2

Food.	Water.	Albumen.	Fat.	Carbohydrates.
*Vegetables in general, average	62.2	6.40	1.40	30.
White bread	40.45	6.15	0.44	51.12
Black bread	31.	11.	.....	57.
Dried fruit	1.18	13.31	3.18	81.08
Milk	87.42	3.41	3.65	4.81
Cream	65.51	3.61	26.75	3.52
Buttermilk	90.27	4.06	0.93	3.73
Butter	14.49	0.71	83.27	0.58
Cream cheese	35.50	17.44	40.80	5.21
Lard	0.70	0.26	99.04	
Sugar	2.16	0.35	.....	96.32
Vinegar	94.	.....	.....	0.4
One egg, estimated not by percentage, but amount in average egg	8.25 ʒ	1.4 ʒ	1.35 ʒ	0.05 ʒ
Tea	97.9	0.3	.....	0.6
Coffee	94.7	0.18	0.52	1.4
" with milk	93.3	1.60	2.20	1.6
Chocolate with milk	89.	3.7	3.6	3.8

* Vegetables exclusively American, such as tomatoes and green corn, are not included in this analysis.

The question of the water allowance is a serious one. The chief hardship of the dieting is, to many Americans at least, the withdrawal of the water-supply, and patients continually ask whether water makes fat. So far as our present chemical knowledge goes, water does not make fat. Indeed, we have never seen a reason given, which to our own mind was satisfactory, for the abstinence from water-drinking that is so much insisted upon in all the modern systems of fat-reducing. The explanation offered by German writers is that by causing an increased blood-volume the water dilates the small capillaries and thereby facilitates the change of food-fat into body-fat. Whatever may be thought of this as science, the concord of practice is not to be forgotten, and, whilst the extreme measures in regard to the water ration seem unnecessary, it is probably in many cases essential to moderate the daily allowance.

When the symptoms of disturbance of the circulation are very great, and especially when the excessive drinking of beer or other liquid has caused a great excess in the bulk of blood in the body, abstention from fluids may be imperative in order that the volume of the blood may be reduced and the strain upon the circulation lessened. In Professor Oertel's case the state of affairs just spoken of seems to have existed, and it is almost inevitable that he should magnify the importance of the dryness.

The choice of the form of exercise to be used in the treatment of a corpulent patient ought to largely depend upon the circumstances of the individual case. Two factors should never be lost sight of: first, the exercise should really be severe enough to be effective; secondly, it should be as little irksome as possible. There can be no disputing the severity and the effectiveness of mount-climbing as prescribed by Professor Oertel, and in Europe, with its great central mountain playground, mount-climbing is in a large majority of cases very practical. At first the patient may ascend the same slope day after day, each time going a little higher, but as "the cure" progresses different excursions should be made to add interest to labor. In America high attractive mountains are not so accessible as in Europe, and as we cannot believe that any one form of exercise has any specific or peculiar virtue, other work may be well substituted. Wood-sawing is largely employed in some European anti-fat sanitariums, and is undoubtedly efficient. Regulated severe gymnastic work is available in many cases. A form of foot-exercise whose fat-destroying value every trainer is familiar with is running. The influence which it has upon heart and lungs does not differ from that of mountain-climbing, and if there be any truth in the teachings of Oertel, as to the value of pulmonic and cardiac gymnastics, running ought to be of especial value when the heart or lungs are giving evidences of being especially affected by the fat-accumulation. Boat-rowing or even canoeing may serve the purpose of the fat man.

It seems to us, however, right here to give an especial caution in regard to any of these violent exercises,—namely, that at first they should be practised very carefully. They are of no use unless thoroughly performed, but may be taken slowly. The mountain-climber or the runner should at first stop every few feet, to allow heart and lungs to recover themselves. Moreover, in cases like that of Professor Oertel, in which the heart-symptoms are

severe, the physician must be very sure that the heart is not in a state of true fatty degeneration, but of fatty overloading,—*i.e.*, of what may be well termed fatty oppression. In a doubtful case the utmost caution must be exercised.

In directing the life of a corpulent patient the physician should always look after the details, such as bathing and clothing. The bath should always follow the exercise. Unless the latter is severe enough to cause free sweating it rarely will accomplish anything, and not only for cleanliness, but also for the purpose of keeping the skin healthy, washing is essential. The temperature of the water should be low, unless in very feeble patients or where the heart-failure is such as to create fear of shock. When the patient's means allow it, a half-hour's massage after the bath will not only be agreeable, but helpful. During exercise clothing should be sufficient to aid in sweating, but not oppressive. It is always necessary to guard against the possibility of taking cold during the exhaustion which at first may follow the exercise, but especially should patients who select mountain work be cautioned to protect themselves against the sudden weather changes which occur almost daily in such regions.

"A cure" which the writer can especially recommend to robust men who are fearing rather than suffering from excessive corpulence is a tour in the Rocky Mountains or in the wilderness of New Mexico or of Texas. If the expedition is arranged to be out six weeks, so that the only food carried can be flour, coffee, and salt-pork, and the daily horseback march or hunt is up to the full limit of equine and human endurance, there will be no need of a scientifically controlled dietary. The writer's experience in the Texan deserts—where the thermometer sometimes reaches 110° F. at midnight, water to be found only once in thirty-six hours, and shade at no time—leads him to especially commend it to the searcher after leanness who can stand the heat. More agreeable and scarcely less effective are the opportunities afforded in the higher and more northern table-lands and mountains of the Rocky Mountain region. Even in this cool atmosphere the writer has found that, although at first it may be a labor to climb upon the steed, at the end of six weeks of journeying the joints are loosened and an agility attained worthy of a cow-boy. The daily labor of travelling in a canoe in a wilderness such as that of Maine, the long hours of paddling or of rowing, the assistance to the guides in camp-making, are in many cases sufficient to reduce the over-stout man to a better condition; and if he will shoulder his loads at portages manfully, carrying packs of forty or fifty pounds through swamp or forest, up-hill and down-hill for some hours daily, he will find little need to haunt sanitariums, but will soon gain back from nature that strength and freshness which, perchance, he has lost by unnatural eating, drinking, and physical indolence.

STENOCARPINE, THE NEW LOCAL ANÆSTHETIC.

THE evidence to which we referred in our August number as to the anæsthetic properties of the substance which is termed by Dr. Seward *Stenocarpine* has been confirmed by experiments made by Dr. Hermann Knapp (*Medical Record*, August 13, 1887) and Dr. Edward Jackson (*Medical News*, September 3, 1887).

Dr. Knapp's experiments as to the physiological action of this substance on the eye seem to prove that it produces anæsthesia of the cornea and conjunctiva in the same way and fully as energetically as a cocaine solution of equal strength. The conjunctiva becomes bleached and the seat of an unpleasant feeling of dryness, which sets in with the anæsthesia and lasts the whole day, while the pupil commences to dilate in from eight to twelve minutes, reaches its maximum, that of the utmost atropine dilatation, in twenty minutes, remains in this condition the whole day, and disappears, as a rule, on the fourth day. Accommodation likewise commences to diminish within ten minutes, and is completely paralyzed in twenty to twenty-five minutes, the tension of the eyeball being but slightly diminished, while the interior and mobility of the eye and the lustre of the cornea are unchanged. Dr. Jackson likewise found that instillation of one drop of a two per cent. solution of the drug caused slight smarting, followed by dryness of the conjunctiva and widening of the palpebral fissure; and within two and one-half minutes complete anæsthesia of the conjunctiva and cornea, the anæsthesia lasting for about twenty minutes. These results were obtained in sixteen different individuals, in all complete anæsthesia being attained in one or two minutes, and passing off mostly within half an hour.

It would also appear that it produces a wider dilatation of the pupil than other mydriatics.

Applied to the mucous membrane of the nose, throat, urethra, and glans penis and rectum, anæsthesia was readily produced to an equal if not more marked degree than can be obtained by the employment of a solution of cocaine of equal strength, while when applied to the throat or nose the senses of taste and smell are respectively suspended. Applied to the skin externally, Dr. Jackson states that it caused complete anæsthesia, his method being to simply moisten the surface and keep it continually moist with the solution, when, after about ten minutes, a needle might be plunged into the skin without the slightest sensation. In this respect Dr. Jackson's results are antagonistic to those of Dr. Knapp, who found that in five different cases external application to the healthy skin gave uniformly negative results. Dr. Jackson explains this discrepancy by attributing an extremely superficial action to the drug, and he states that it is only the external layers of integument which are anæsthetized, and if the point of a needle be plunged somewhat deeper it may be readily felt to pass from the anæsthetized layer into one in which it causes the usual amount of pain.

Dr. Jackson claims that to render this remedy applicable for producing painless operations on the healthy skin the incisions must pass but gradually through the skin, and that as each layer is divided the wound must be freshly moistened with the solution. In this way he claims to have succeeded in operating without producing any painful incisions.

As regards the toxicological action of this remedy when given in large doses, the nature of the symptoms of poisoning which it produces does not appear to be as yet clearly established. Thus Dr. Knapp states that its action is analogous to strychnine, five minims injected into a large rabbit causing violent tetanic convulsions, the pupils dilated, respiration and pulse accelerated ; while Dr. Jackson, on the other hand, describes stenocarpine as a depresso-motor poison, and in no case in his experiments does he refer to the production of convulsions. In both cases, however, it appears that death is not produced through the action on the organs of circulation, since the heart continues to beat after entire cessation of respiration. It is evident that this part of the subject requires considerable revision.

As far as can be yet determined, the physiological action of this substance appears to be closely similar to that of cocaine, and would suggest the similarity of action to that which might be possessed by a solution of cocaine containing one of the strong mydriatics, such as duboisine or hyoscyamine. For while cocaine has but little power of paralyzing the accommodation, and its action on the pupil may be overcome by one-fiftieth of its weight of eserine, stenocarpine requires two-thirds or four-fifths of the myotic to overcome it ; and if, as evidence seems to indicate, it is as a local anæsthetic more powerful than cocaine, and as a mydriatic more powerful than homatropine, its future is a very promising one.

Unfortunately, the botanical origin of this drug is as yet unestablished, and the name stenocarpine therefore entirely unwarranted, as both Dr. Jackson and Dr. Knapp obtained their specimens from Dr. Seward, whose manufacture was also used in the experiments of Dr. Claiborne.

Dr. Jackson states that in Professor Charles S. Sargent's " Report on the Forests of North America" no such tree as the *Acacia stenocarpo* is mentioned, and although our inclinations would lead us to a warm reception of stenocarpine, our judgment leads us to hold our opinions in reserve until the source of the drug is clearly established, and until some other chemist succeeds in isolating an alkaloid with similar properties.

By this statement we do not wish to reflect on the methods or results of the gentlemen who have already experimented with this remedy ; but we do not have to go into very ancient history to find an illustration of claims of a precisely similar nature which further experience proved to be entirely unwarranted, and attended only by the gravest disappointment.

Since writing the above Dr. J. H. Claiborne has announced in the *Medical Record* for October 1, 1887, that the substance termed stenocarpine is obtained from the *Gleditschia triacanthus*, and he therefore suggests the name of *gleditschine*. The methods of extraction of the alkaloid, if such it be, are not given.

VERATRUM VIRIDE IN THE TREATMENT OF PUERPERAL ECLAMPSIA.

ATTENTION has recently been called to the value of veratrum viride in the treatment of puerperal eclampsia. Dr. Ira E. Oatman, Sacramento, Cal., in a suggestive paper read before the Section on Obstetrics, Ninth International Medical Congress, says the remedy is "safe, speedy, reliable, and

permanent in its action." After controlling the convulsions by chloroform, morphine, chloral, and the bromides, and the evacuation of the uterine contents at the earliest possible period, he exhibits 8 drops of the saturated tincture *per os*, or 15 drops *per rectum*,—the dose to be repeated every fifteen or twenty minutes until the frequency of the pulse is reduced to forty beats per minute. When used hypodermically, he is of the opinion that the excessive action of the drug is less under control. At the same time the drug is administered it is well to have alcoholic stimulants at hand, although Dr. Oatman has never observed any toxic effects. He records a case of a man recovering after a dose of 120 drops of the saturated tincture, and of a child, 4 months old, after a dose of 52 drops.

At the twelfth annual meeting of the American Gynæcological Society Dr. Charles Jewett, Brooklyn, read a paper, entitled "A Note on the Treatment of Puerperal Eclampsia," in which he recommends the use of veratrum viride hypodermically in doses of from 10 to 20 minims, repeated at the expiration of half an hour if the pulse does not diminish in frequency. "No convulsion can occur while the patient is under the influence of veratrum viride, and the pulse below sixty per minute." Dr. Jewett does not advise the use of the drug to the exclusion of all other remedial procedures.

The exhibition of veratrum viride in the treatment of puerperal eclampsia is by no means a new use of the drug. Fearn,* Boyd,† and Kenyon‡ have reported cases of puerperal convulsions in which veratrum viride was successfully employed. The evidence from clinical observation up to the present time, however, has been insufficient to establish the remedy in professional confidence, and we find no reference to the drug in the more recent European treatises on obstetrics.

A strong *à priori* argument in favor of this use of veratrum viride may be drawn from a brief consideration of the pathology of eclampsia and the physiological action of the drug. The very large majority of obstetricians will give assent to the proposition§ that puerperal eclampsia is a symptom of urinary resorption, conditioned upon functional or organic disease of the kidneys or mechanical obstruction of the ureters,‖—flexion, infraction, or stretching. The nerve-centres are poisoned by the retained urine, and increased reflex irritability results. The experiments of Kussmaul and Tenner render in a high degree probable the theory that the immediate cause of the convulsions, as in the case of epilepsy, is acute cerebral anæmia, the result of spasm of the arteries conveying blood to the brain. The convulsions and coma constitute a reflex vaso-motor neurosis. The peripheral irritant is very frequently uterine contractions.

Now, what is the physiological action of the remedy under consideration?

The numerous and exact researches of H. C. Wood have demonstrated that American hellebore is a powerful spinal and arterial depressant. "In full therapeutic doses," says Wood,¶ "it lowers the pulse-rate both by a direct action on the muscle (jervia) and by stimulating the inhibitory nerves (veratroidia); it diminishes the force of the heart-beat by a direct influence on the cardiac muscle (jervia), and produces a general vaso-motor paralysis (jervia) more or less complete according to the size of the dose." When a woman with puerperal eclampsia is under the influence of veratrum viride she is literally "bled into her own veins," while at the same time the activity of the spinal centres is also depressed.

Although a powerful remedy, American hellebore, as remarked by Wood, is probably the safest of all cardiac depressants. In the event of alarming symptoms resulting from the drug, it is a clinical fact that alcoholic stimulants are usually rapidly effective in the restoration of the functions of respiration and circulation.

In the light of the evidence now in our possession collected from clinical observation and experimental research, the drug is eminently worthy of further trial in the fulfilment of the indication just mentioned. While the remedy can have little or no effect upon the ultimate cause of puerperal eclampsia, and therefore ought never to be relied upon to the exclusion of other measures (the evacuation of the contents of the uterine cavity in particular), it is probably of very great value in maintaining the effect produced by chloroform, morphine, chloral, and the bromides.

The most eligible form for exhibition is

* American Journal of Obstetrics, 1871.

† American Practitioner, 1878.

‡ New York Medical Journal, 1879.

§ Paul F. Weifel, "Lehrb. d. Geburtshülfe," 1887, p. 474.

‖ Joseph Kucher, "Puerperal Convalescence," etc., 1886, p. 139.

¶ Therapeutics, Materia Medica, and Toxicology, 1887, p. 175.

probably the fluid extract in doses of 3 drops. Norwood's tincture, a saturated spiritus, is more usually employed.

As a memento that the year is coming to an end, we have received from the well-known publishers, E. Blakiston, Son & Co., a copy of their visiting-list for 1888. As this is the thirty-seventh year of this publication, any extended notice of it would be of course superfluous. All the essential features seem to be reserved without much change.

C. E. DODSLEY affirms that the addition of four drops of the oil of sassafras to the ounce of iodoform completely does away with the disagreeable odor. This is certainly important, if true.

Reports on Therapeutic Progress.

TREATMENT OF FIBROID TUMORS OF THE UTERUS BY ELECTRICITY.

An interesting communication was made by DR. APOSTOLI (Paris) before the Section in Obstetric Medicine at the recent meeting of the British Medical Association (*Lancet*, August 13, 1887), with observations and complete statistics of all the cases so treated from July, 1882, to July, 1887, followed by a practical demonstration in the Rotunda Hospital by Dr. Apostoli himself. Owing to his inability to speak English, Dr. Apostoli's paper, which had been translated by his friend, Dr. Woodham Webb, was read by Dr. W. Duncan, one of the secretaries of the Obstetric Section. In this communication Dr. Apostoli says it is five years since he adopted a proceeding which he defines as a galvano-chemical cauterization of the uterus, vaginal, intra-uterine, or parenchymatous, and always monopolar. He points out that all the attempts made by his predecessors in the use of electricity were defective. The current of electricity was employed (1) in a vague and variable manner; (2) without dosage; (3) in a dose insignificant; (4) by a method always extra-uterine; and (5) by a method often dangerous. In 1882 Dr. Apostoli originated his new and rational way of using electricity, which he has since gone on modifying and improving. He claims to have supplanted the old method by a plan which is—1. Precise, by the introduction of new galvanometers of intensity, exact counters and measures of the electric current. 2. Energetic. 3. Tolerable, in spite of the enormity of the doses, owing to the introduction of the wetted-clay electrode, which renders the cutaneous pole innocuous, and permits a current of signal medical intensity being transmitted through it easily and without injury. 4. Better localized. 5. Thoroughly under control. He applies to the diseased uterus a continuous galvanic current of an intensity and duration sufficient to produce the therapeutic effect required. This application is galvano-chemical cauterization. 6. More scientifically exact. The positive pole is hæmostatic—anti-hemorrhagic—in its action, sometimes instantly, or, again, gradually; it is the remedy, *par excellence*, in bleeding myomas; on the other hand, with the negative pole we obtain a state of temporary congestion, without direct hæmostatic effect. It will render benefit in fibroids accompanied with amenorrhœa and dysmenorrhœa. He believes his method is—1. Easy of application. 2. Simple. It is a skilful uterine therapeutic soundage. It needs a good galvanometer of intensity, a battery capable of yielding an adequate current of electricity, an inoffensive cutaneous electrode in wet potter's earth, an inattackable intra-uterine electrode in platinum, and a steel trocar for the galvano-punctures. 3. The current is mathematically dosable. 4. The seat of operation is optional. 5. It is of easy control. 6. It is antiseptic. 7. It is easily borne, as a rule. 8. It does not impose on the patients any forced exclusion. The positive pole is the remedy for bleeding, the negative for non-bleeding fibroids; but, further, if the negative pole is made *by puncture* to enter into the substance of the fibroid, it will insure its diminution, and further, by a sort of *contre-coup*, will exert a hæmostatic action. Hence Dr. Apostoli gives these rules. Pole positive intra-uterine for the restraining of hemorrhage; pole negative intra-uterine for non-bleeding tumors; while the indications for galvano-puncture are twofold,—(1) as a matter of necessity, owing to uterine atresia, or where a sound, owing to displacement of the uterus, cannot be introduced; (2) by preference, if the punctures can be combined with intra-uterine cauterizations, so that one can expedite and make sure of effects which, with the cauterizations only, would be slower and more imperfect. Dr. Apostoli gives the following directions for galvano-puncture: 1. Antiseptic vaginal irrigation before and after each operation. 2. The puncturing instru-

ment should be a small steel trocar or needle, and the punctures should be shallow, not deeper than one to two centimetres. 3. The puncture should be made in the most prominent part of the fibroid, if possible in the posterior cul-de-sac. 4. No speculum should be used. 5. The seat of any pulsation should be ascertained, so as to avoid wounding any vessels. 6. If there is any unusual hemorrhage the vagina should be dilated with an expanding speculum, and, if necessary, pressure forceps should be put on the bleeding point. Dr. Apostoli claims that, as a result of this plan, every fibroid tumor will undergo a reduction appreciable by touch, and demonstrable by internal measurement. The reduction of the size of a tumor is generally associated with an accumulation of subcutaneous adipose tissue on the abdominal walls. Further, the regression of the tumor goes on after treatment has been suspended, it becomes liberated from its local attachments, and it tends to become more sub-peritoneal and pediculated. Again, from a clinical point of view, Dr. Apostoli asserts the results are not less striking. He says that ninety-five times out of a hundred all the miseries constituting the fibroidal condition are suppressed, such as hemorrhages, the troubles of menstruation, dysmenorrhœa, amenorrhœa, nervous disturbances, the direct pains in the growth itself, and from mechanical pressure and the harassing series of reflex actions. Dr. Apostoli has, in the five years from July, 1882, to July, 1887, made, either privately or at his clinique, as many as five thousand two hundred and one applications of continuous galvanic currents for most of the maladies included in the gynæcological nosology, which he thus enumerates in the following order: (1) Fibroids of the uterus,—polypi; (2) entire or partial hypertrophies of the uterus; (3) subinvolutions; (4) acute and chronic metritis and endometritis; (5) ulcerations of the neck of the uterus; (6) perimetritis inflammations (perimetritis, parametritis, cellulitis, phlegmons); (7) ovarialgia; (8) ovaritis and periovaritis; (9) salpingitis; (10) ovarian and tubular cysts at an early age; (11) atresia; (12) hæmatocele. These five thousand two hundred and one operations (during a period of five years) were made upon four hundred and three patients. Of these he lost only two; in one he says he did not recognize the existence of a suppurating ovarian cyst which ended in death from peritonitis, in the other death was due to a puncture made too deeply. From July, 1882, to July, 1887, he has had under his care two hundred and seventy-eight patients with fibroids or hypertrophy of the uterus in some manifest degree, upon whom he has used four thousand two hundred and forty-six applications of the continued current of electricity. He does not wish to convey the impression that all have been cured, but he affirms that when there has been no negligence, and where his advice has been fully acted on, ninety-five times out of one hundred permanent benefit has been acknowledged. Among the patients who had not the will to let Dr. Apostoli finish what he had begun, and whose impatience led them voluntarily to seek removal of their tumors by excision, seven put themselves into the hands of six most eminent surgeons, and not one recovered from the operation. It is of great importance that this new method of treatment should be brought before the notice of the profession, and hence a full *résumé* of Dr. Apostoli's paper is given.

EXPERIMENTS WITH ANTIFEBRIN.

According to the Vienna correspondent of the *Medical Press*, July 27, 1887, Dr. Weinstein summarizes the results which he had obtained in his experiments with "antifebrin" in the clinics of the General Hospital in the following way: 1. As an antipyretic from ⅛ to ¼ gramme dose is sufficient to lower the high temperature by three degrees after the lapse of from two to four hours. Antifebrin may be administered in daily doses of from 1 to 2 grammes. 2. The transition of the high temperature to the lower, and *vice versa*, is a gradual one. The apyrexia usually lasts for some hours, sometimes from twelve to sixteen. 3. No bad consequences supervene when the drug is administered with precaution. After large doses, such as 0.25 or 0.50 gramme, have been administered at one time, great perspiration, and occasionally also shivering or cyanosis, used to occur. Hyperpyresis and collapses hardly ever supervened. 4. The blood-pressure first shows a tendency to increase, but is no longer influenced when the antifebrin has been administered for a longer interval of time. The rigidity of the blood-vessels increases slightly. 5. The best results were obtained with antifebrin in cases of erysipelas, puerperal process, and intermittent fever. The swelling of the spleen decreased. Dr. Weinstein remarks that antifebrin is best fitted for regulating the temperature, for producing a gradual decrease of the abnormal warmth of the blood, so that no

collapse may occur. He advises its administration in doses of from ⅛ to ¼ of a gramme, from three to four times a day. The temperature must be measured twice daily, and the drug is to be administered only when the temperature has reached 40° C. and over. A decrease of 2° C. is sufficient. The administration of the antifebrin as an antirheumatic is to be recommended in acute cases, in doses of ¼ of a gramme at each two hours, and of from 1 to 1½ grammes daily. The antifebrin may be administered in the same doses as a "nervinum," but only with a palliative effect.

THE INDICATIONS AND RATIONALE IN WASHING OUT THE PUERPERAL UTERUS.

Dr. J. Halliday Croom recently read a paper before the Edinburgh Obstetrical Society in which he formulates the circumstances under which the antiseptic washing out of the uterine cavity is indicated (*Obstetric Gazette*, August, 1887).

Indications.—1. Where, with localized tenderness over the uterus, there is a high pulse and temperature, and a fetid discharge. It is to be observed that the discharge must be fetid *from the uterus*. In order to decide this question, it is essential to wash out the vagina with an antiseptic wash,—inodorous, such as corrosive sublimate,—and then putting the finger up and into the cervix, to decide whether it is fetid or not. As the author points out in the sequel, all first washings out should be performed under chloroform, therefore he always explores the cavity of the uterus with the finger. No reference need here be made as to the ease with which this can be performed, at least during the first week of the puerperium. Even at a long period after labor, the carbolized fingers can be comparatively easily introduced. In most cases some morbid product will be found, and in all cases the necessary dilatation of the cervix will much facilitate the process of washing out.

2. Where, with a high pulse and temperature, there is any question as to the absolute complete delivery of the placenta; and, in this connection, it is impossible to emphasize too strongly the importance of examining closely the placenta after delivery, whether it be expressed, extracted, or delivered spontaneously. Such care will often eliminate at once any possible cause of infection.

3. Where portions of membrane have been retained *in utero*, and give rise to increase in pulse and temperature. Here, however, it should be noticed that it is possible to do harm in endeavoring to remove the membranes completely at the time of delivery. It is much better to leave a portion of membrane than to open up the genital canal in search for a small piece.

4. After the birth of a putrid fœtus.

5. Where the uterus remains abnormally large after labor, and where, as a result, owing to the presence of decomposing clot, symptoms of septic infection develop themselves. In such cases, washing out ought to be accompanied by the introduction of the finger within the uterus, and in all such cases quinine ought to be administered in large doses.

6. In cases where, late on in the puerperium, symptoms of septicæmia develop themselves.

7. In those somewhat rare, but well-recognized cases, where, from acute flexion of the uterus, the lochia are retained and decompose.

8. In some cases of imperfect abortion and premature labor, and in all cases where the uterus, under such circumstances, has been curetted.

9. In all cases where the hand has been introduced—say in cases of post-partum hemorrhage, adherent placenta, or uterine hydatids—washing out the uterus with hot antiseptic water is the recognized treatment.

Rationale.—"What is the *rationale*," the author next asks, "of washing out the puerperal uterus in septicæmia?" It seems, at first sight, open to doubt how far washing out the uterine cavity can prove effective in checking septicæmia if rapidly-multiplying microbes have already passed into the system.

BALDNESS; WHAT CAN WE DO FOR IT?

The above was the title of a paper read by Dr. G. T. Jackson before the Medical Society of the County of New York at a recent meeting (*N. Y. Med. Journ.*, August 6, 1887). Alopecia præmatura alone received attention. Premature baldness, it might be said in a general way, was that occurring before the forty-fifth year, although the period was arbitrary. Subdivisions were made into idiopathic and symptomatic. The idiopathic form began unannounced by any antecedent disease. Many families had it for generations. The different causes alleged for it were named, but the author gave particular attention to the influence exerted by want of

proper care of the hair, as this was under the control of the patient, and was a part of prophylaxis and treatment. He was inclined to think that due attention to proper care of the scalp and general hygiene of the body were more reliable than any so-called remedies. Women gave more care to their scalps, and not only was baldness less common among them than among men, but the results of treatment were better. In families in which baldness was hereditary, prophylaxis should commence at birth with proper cleansing of the scalp, the use of soap and water, the brush and comb, and the avoidance of all things which might injure the scalp. The shampoo need not be repeated more than once or twice a week, and after drying some unguent, such as sweet oil, should be applied. What not to do was nearly as important as what to do. Pomades, as they were liable to become rancid and injure the scalp, should not be used. Wetting, twisting, pulling, and scorching the hair, as fashion demanded, were injurious. Close-fitting hats and caps should not be worn. Anxiety of mind should be combated by cultivating a cheerful disposition. Baldness due to dandruff, syphilis, typhoid fever, etc., next received attention. In addition to treatment appropriate to the special disease, the author again urged the importance of systematic care of the scalp and hair.

A READY METHOD FOR REMOVING FOREIGN BODIES FROM THE ANTERIOR NARES.

Physicians are often called upon to remove peas, buttons, and various substances from the nostrils of children who have themselves introduced them there. A ready method for removing such substances is described by Mr. T. Osborne-Walker in the *Lancet* for September 17, 1887, where he states that recently a little boy was brought under his care with a button tightly impacted in the angle between the vomer and os nasi at the bridge in the right nostril. Ineffectual attempts at extraction had evidently been made, as shown by blood oozing from the nostril, and some, coagulated, adherent to the button, partially concealing its outlines from view, and also by the button being fixedly jammed in. In such cases, to prevent struggles and interruption, the child's arms, hands, and legs should be first confined, by folding tightly round these and the body a long, clean apron, and then placing the child on an attendant's lap, facing a window, while the operator stands behind the patient, and, bending over and depressing with two fingers of the left hand the apex of the nose, to admit as much light as possible upon the object to be removed, with the right hand very carefully, to avoid its descent into the pharynx or larynx, the spoon end (with the concavity directed forward) of an ordinary pocket-case director should be introduced, with which at once with a simple lever movement or jerk the foreign body may be readily ejected.

By attention to the following points the removal is instantaneously effected: The close confinement of the hands, arms, and legs by a shawl, blanket, or apron; a good light; a reliable person to securely hold the child; the position of the operator behind the patient; depressing well the apex of the nose to obtain a good view of the object; and, lastly, getting the concave face of the spoon of a director fairly behind the body before making the forward lever movement.

THE HYDRATE OF TURPINA IN THE TREATMENT OF CATARRHS AND BRONCHITIS.

In the *Medical Record* for September 24, 1887, Dr. Halsted Boyland calls attention to the use of hydrate of turpina, an alkaloid which has recently been discovered in turpentine. This substance consists of round, rhomboidal, and polygonal crystals, presenting much the same appearance as those of hydrate of chloral. Dr. Boyland administered it in a number of cases in the form of a mixture, finding that when given in pill form it was apt to cause disturbance of the stomach.

The following is his formula:

℞ Hydrate of turpina, gr. xxiv;
Glycerin, C. P., q. s. ut f. solutio;
Syrup of lactucarium, ad ℥i. M.
Sig.—Give 1 teaspoonful every three hours.

The employment of this remedy in the treatment of chronic catarrh causes loosening of the cough, renders the expectoration free and easy, the skin becomes soft, moist, and natural, and the bronchial râles diminish.

According to Dr. Boyland, there is not the slightest taste or odor of turpentine about this alkaloid. Taken in doses of 10 grains it produces in some patients a sense of fulness in the epigastrium and slight cerebral hyperæmia, accompanied by a feeling of stimulation. These symptoms disappear as the drug is withdrawn. 15 grains is a maximum dose.

HYDROCHLORATE OF APOMORPHINE.

This useful salt has been extensively tried by DR. STOCQUART, of Brussels, as a remedy for certain kinds of cough, and he speaks highly of its value. The kind of cough in which it has proved most successful is a distressing and frequent hacking unattended with expectoration, or with exceedingly difficult expectoration, and the improvement of the patient's condition is usually effected in a few days. The drug is, as a rule, well borne, although a few individuals manifest a special susceptibility to its action, and rarely nausea, colic, and diarrhœa result from its employment. The dose is a minute one, only 3 or 4 milligrammes of this alkaloid being given in water in the twenty-four hours; and, as the solution rapidly alters by keeping, it is advised to prevent its decomposition by the addition of a few drops of hydrochloric acid, which does not interfere with the therapeutic effects.—*The Lancet*, September 3, 1887.

A SIMPLE METHOD OF APPLYING FLUIDS TO THE NASAL CAVITY.

The general impression among the profession is that nasal douches are not only hurtful from the fact that possibly the fluid enters the Eustachian tube and there sets up inflammation of the middle ear, but it would also seem that the fluid itself in contact with the nasal mucous membrane may prove harmful. DR. CHARLES W. DULLES, in the *Medical and Surgical Reporter* for August 6, 1887, describes a simple plan for applying fluids to the nasal cavity, which is to be recommended on account of its feasibility, although we do not wish to be understood as recommending the method, when so many other appliances, such as the use of sprays, etc., are less open to objections. "Take a test-tube about four inches long and half an inch wide and place in it the solution to be used. Open the mouth and breathe through it. Put the open end of the tube into one nostril, catching the rim against the ala so as to make a good fit. Then bend the head back, and raise the closed end of the tube, so as to *pour* the fluid into the nostril. All the while keep breathing through the mouth. The fluid will now run into the nose, pass back to the naso-pharynx, and can be made to go around behind the septum and on top of the soft palate, and come out of the opposite nostril. By moving the head about in various directions the fluid can be made to reach any point in the nares, in front or behind, and to remain in contact with it as long as may be desired.

"Any one who will try it will be surprised to find how thoroughly and easily this can be done.

"Of course, all fluid applications to the nares must be well warmed and of a proper specific gravity. If, for example, Dobell's solution be warmed to about 100° Fahr. and used in this way, it will be found a most soothing application. The quantity to be used may easily be as much as such a test-tube will contain. And it may be filled several times and used again and again at a single sitting."

TREATMENT OF SCARLET FEVER.

It would be interesting if a census were to be taken with a view to ascertain what treatment of scarlet fever was most in vogue among practitioners of to-day. We suspect that not an inconsiderable portion of this vote would fall to the lot of expectancy, by which must be understood the absence of any attempt to arrest the course of the malady, combined with great watchfulness of the symptoms and the treatment of the most dangerous of these morbid phenomena. The present epidemic (in London) is for the most part of a mild nature, but considerable attention has to be given to the throat, which seems to suffer in a marked degree, the glandular swelling being correspondingly marked. Hence it will be found that gargles of all kinds, and especially those of an antiseptic nature, are freely used, together with compresses of various degrees of heat and moisture applied to the neck. Most practitioners, even those of the most expectant schools, employ topical applications to the throat and nose. Many articles are used to relieve the thirst and sensation of dryness, but nothing is more effective than ice and a little raspberry vinegar. It is important to keep the nostrils and nasal passages sweet and clean. For cerebral symptoms, nothing is better than the application of cold, either in the mild form of lint soaked in iced water and applied to the shaven head, or in the more effective capilline tubes, with irrigation. Compression of the carotid arteries and bleeding are seldom practised nowadays, either in scarlet or any other fever. Aconite in minute doses, frequently repeated, is still the favorite drug of many practitioners, but its employment needs the exercise of clinical discretion, especially in children. Actual bathing in cool or tepid water is practised by but few physicians, though the number of practi-

tioners who recommend the use of cold or tepid sponging, the patient lying in bed on a mackintosh, appears to be largely on the increase. Most of the alleged specific and curative agents have long since lapsed into discredit. Belladonna finds but few adherents, and carbonate of ammonium almost none. Considerable difference of opinion exists on the merits of inunction with fat, cold cream, and the like, two of the most recent authors on the diseases of children taking opposite views, Dr. Goodhart advocating and Dr. Angel Money opposing the universal inunction, though the latter sees no objection to relieving the tension of the palms and soles by the application of geoline or vaseline scented with eucalyptol.—*The Lancet*, September 3, 1887.

THE THERAPEUTIC INDICATIONS FOR THE USE OF THEINE.

Dr. Thomas J. Mays has shown that in theine we possess an agent which has the power of paralyzing sensation without affecting motion, and that it does this with a great degree of certainty, and without any appreciable injury to any part of the body, even when administered in large doses. He further shows in the *Polyclinic* for September, 1887, that in order to obtain the full effect of theine it is not necessary to inject it deeper than immediately beneath the skin, when it is exceedingly prompt in exerting its analgesic action. He has injected as much as 2½ grains without experiencing anything but the best results, and he even would not hesitate to go beyond this limit. He has employed it in cases of neuralgia of both lumbo-sacral and cervical brachial surfaces, accompanied by sleeplessness, spasms of the muscles of both legs and those of the left arm. In these cases he gave 2½ grains of theine subcutaneously in four different localities along the spine, which gave instantaneous relief to the pain and the induction of sleep during the following night. This amount was injected daily for twenty-one days in succession, at the end of which time pain had entirely disappeared and the appetite and sleeping greatly improved. In another case, of locomotor ataxia, 3 grains, injected in different spots along the spine, also produced great relief. No prolonged irritation and no inflammation are ever produced at the seat of injection, the slight burning which the injections produce being probably due to the large quantity of water which is required to dissolve this alkaloid. Dr. Mays has found that benzoate of sodium increases its solubility, and he therefore uses the following formula:

℞ Theine,
Sodium benzoate, āā ʒi;
Sodium chloride, gr. viii;
Distilled water, fʒi. M.
Sig.—For hypodermic use.

Six minims equal one-half grain of theine.

In the use of theine it must be borne in mind, first of all, that the property of this drug is simply to relieve pain, and while it performs this with perfect satisfaction, it will fail to give permanent relief in obstinate and protracted pain unless the cause of the pathological condition be combated.

THE TREATMENT OF SOME FORMS OF AORTIC DISEASE.

Dr. Sansom (London) gave a valuable address upon the "Treatment of Some Forms of Aortic Disease" before the Section of Pharmacology and Therapeutics at the recent meeting of the British Medical Association (*Lancet*, August 13, 1887). After a few remarks upon mitral disease, in which he said he had come to the conclusion that digitalis was our most efficient remedy in mitral regurgitation and convallaria in mitral stenosis, he gave an analysis of a large number of cases of aortic disease, from which he concluded that the two commonest causes of this form of cardiac affection were (*a*) rheumatism and (*b*) atheromatous degeneration. He had found these two causes about equally common. Aortic disease attained its maximum frequency in early adult life. In childhood, according to his observations, the mitral valve was affected in proportion to the aortic as 5 to 1. This accorded with general experience. He proposed to confine his remarks upon treatment strictly to one class of cases,—viz., aortic disease, arising from rheumatism; and he wished it to be distinctly understood that his observations did not refer to any other branch of the subject. He would divide rheumatic cases into two groups,—(*a*) those in which there were no symptoms referred to the heart, and (*b*) those cases in which symptoms referable to the heart were present. As regards the former class, patients sometimes sought advice for the most diverse maladies. He related a case of a lad who consulted him for incontinence of urine, and in whom well-marked aortic disease with hypertrophy of the left ventricle was found to be present. In

cases of aortic disease without cardiac symptoms, it might be laid down as an absolute rule that all agents which tended to increase the force of the ventricular systole were absolutely hurtful. Compensation being already perfect, such agents could only serve to disturb the equilibrium. Pain at the heart was an essential and early symptom in aortic disease, while it was well known that pain was not an essential symptom in mitral disease. The pain in aortic disease might attain the intensity of a true angina. Whether hypertrophy or dilatation should be the first to follow disease of the aortic valve was purely a question of nutrition. If nutrition were well maintained, hypertrophy would come first; if nutrition were imperfect, dilatation would precede. As regards the very important question of the administration of digitalis in aortic disease, medical opinion and experience had varied much from time to time. The present tendency was rather in favor of its administration, a view supported by so good an authority as Dr. Oliver, of Newcastle-on-Tyne. While carefully guarding himself against an absolute expression of opinion, Dr. Sansom pointed out certain drawbacks to the use of digitalis,—viz., (1) It may increase the distress and aggravate the symptoms present. In some of his cases where digitalis had had this effect he had seen great relief follow the administration of 5-minim doses of tincture of aconite and the inhalation of nitrite of amyl. (2) Digitalis sometimes caused sickness. (3) In some cases where much temporary relief was obtained by its administration sudden death had followed, apparently as the result of its use. Yet, in spite of these dangers and drawbacks, he believed that digitalis was sometimes of service in the *early* stage of aortic disease and for a *limited* time. If given in the same manner and for the same length of time as was usual in mitral disease, great evil would result.

THE MEDICINAL USES OF THYMOL.

Dr. Frederick P. Henry states in the *Medical News* for September 3, 1887, that he has been prescribing thymol in a number of cases of intestinal diseases, catarrhs, acute and chronic, and typhoid fever with satisfactory results, its employment being followed by steady decrease of the temperature, by gradual diminution of the daily number of stools, by the absence of mental excitement, and by the clean, moist tongue presented in every instance.

The medicinal use of thymol is based upon its well-known antiseptic properties, and its action in the cases under consideration was favored by its great insolubility, which enables it to reach the intestine, mingle with its contents, and neutralize the toxic ptomaines that are formed in great quantity in catarrhs of the gastro-intestinal tract. In the opinion of many authorities, it is to the absorption of large quantities of these toxic products of fermentation and putrefaction that the so-called typhoid symptoms are largely due. These opinions do not rest solely upon theory, for it is found that, during the administration of thymol, phenol, which is one of the most constant products of intestinal putrefaction, and is almost entirely eliminated with the urine, is no longer found in that excretion.

Dr. Henry always prescribes the thymol in pill form, of which the best excipient is medicinal soap; a dose usually is a 2 to 2½ grain pill every six hours, and he thinks that, although this quantity may be increased with safety, the results obtained will be no better. In only one case, in which Dr. Henry's experience coincides with that of several other observers, was digestive disturbance occasioned.

INJECTIONS OF CARBOLIC ACID AND HYPEROSMIC ACID.

No one probably lays claim to a complete knowledge of the pathological changes which give rise to the condition or conditions known as muscular rheumatism, but it may fairly be supposed that they include a hyperæmic state of the perimysium, together with some plastic infiltration and migration of white blood-corpuscles. Now it was shown by Binz that carbolic acid, salicylic acid, and several other substances possess the property of paralyzing and killing leucocytes, and of preventing their migration. This led Dr. Edgar Kurz, of Florence, some few years ago to employ intramuscular injections of a two per cent. solution of carbolic acid in a few cases of muscular rheumatism. The results were astonishingly satisfactory, and were published in *Memorabilien*, 1882, from which source a notice appeared in many other journals; not, however, always very correct as to the doses employed, grammes having been mistaken for grains,—a misconception which, however important, is often very difficult to avoid, as those who read many foreign medical journals know only too well, simply because abroad

"gr." sometimes stands for grains and sometimes for grammes, and as a gramme is more than fifteen grains, the consequences of a misunderstanding on this point may frequently prove serious. Dr. Kurz introduced from eight to forty syringefuls into the muscular tissue at a sitting, each syringeful consisting of a gramme of the solution. In no case was the urine discolored, or any other sign of toxic action observed; the injections were practically painless, and their anæsthetic effect became apparent in half an hour. Since these observations were published Dr. Kurz has continued to employ this method with excellent results. He has also found it very efficacious in the inflammatory affections of the sheaths of tendons due to injuries, and generally in sprains where the ligaments, tendons, or muscles were affected. Some similar and even more universally successful results have this year been published by PROFESSOR BENEDIKT, of Vienna, from the use of the same solution in affections of the ligaments and tendons, but more especially in acute rheumatism, where it appeared to act similarly to salicylate of sodium, quickly reducing the pain, the swelling, and the pyrexia. The best results were, however, obtained by combining the two methods, particularly at the commencement of the disease giving large doses of salicylate by the mouth and at the same time from one to three injections of carbolic acid daily. A somewhat similar form of treatment has been very successfully employed by DR. STEKOULIS, of Constantinople, in sciatica, an affection due to causes of very various nature, but frequently allied pretty closely with chronic rheumatic affections. The injection he used was a solution of hyperosmic acid, a substance which is in constant request by pathologists for hardening tissues for microscopical purposes. All the ten cases in which this remedy was employed were of considerable standing and very obstinate, Jacoby having recommended its use under such circumstances. A one per cent. solution was used, which, on account of the action of light upon it, was preserved in dark glass bottles. One gramme was injected deeply into the gluteal region close to the nerve, and this was followed by other injections extending along the course of the nerve to the number of something like a dozen. The pain caused by the injections was somewhat severe and burning, but it only lasted one or at most two minutes. At first the injections were repeated daily, afterwards every three or four days. Care was required never to insert the needle into the same point as before. Out of ten cases, eight were completely and one partially cured, one only remaining unbenefited. No unpleasant effects beyond a slight tenderness over the points where the needle had entered, and which did not last more than a day or two, were observed.—*Lancet*, August 13, 1887.

THE CAUSES AND TREATMENT OF UTERINE DISPLACEMENT.

At the meeting of the Gynæcological Society held in New York DR. THOMAS ADDIS EMMET read a paper with the above title (*Medical Record*, September 24, 1887).

Close observation and a long experience, said the author of the paper, have been of but little avail, if it be true that the version of the uterus is the disease, and if a simple change in the extent of the deviation be the remedy for the displacement.

Moreover, his experience had taught him that the degree of prolapse below, or the elevation of the uterus above, *a certain plane* caused the symptoms now usually attributed to version alone. Years ago he had pointed out what he had termed "the health line," one that varies in each woman, but so long as the uterus occupies it circulation remains normal.

Anteversion of the uterus certainly is not an abnormal position. Retroversion, to a very marked degree, is frequently detected accidentally, not the least inconvenience ever having been produced by it.

The causes of displacements to which he directed special attention were the *external, and due to pelvic inflammations.*

There is a large class of cases which belong under this head, but which have not received the attention that their importance demands.

With a backward or a forward displacement, the only relief to be obtained must be through some means which will correct the prolapse sufficiently to restore the circulation.

When the uterus has been displaced in either direction, as the result of peritoneal inflammation situated on the anterior face of the broad ligaments, any attempt to correct the version will not succeed unless the same principle be kept in view. When the inflammation has been limited to one side, most frequently upon the left, it is equally impossible to devise any pessary which will not make direct pressure, and in time increase the difficulty by exciting a fresh attack of local peritonitis.

The question may be asked, "What is the general practitioner to do with such cases?" His answer would be,—if he is an honest man and considers the future well-being of his patient,—"Let such cases alone, so far as making any attempt to correct the displacement." If it be absolutely necessary to undertake some mode of treatment, it should be confined to local application of iodine, with cotton and glycerin pads properly placed *to give needed support*, and to the use of hot-water vaginal injections. The treatment of such cases should never be attempted outside of a hospital service, and never would be were the consequences sufficiently understood.

Dr. Emmet then pointed out some of the peculiar features of the pelvic circulation of the female, its close relation to the surrounding fascia and connective tissue.

The whole skill in the successful application of a pessary is to so construct it that, while it relieves the prolapse, it will just dispose of the over-stretch. A pessary does not give relief by simply counteracting version. Its effect is an indirect one, because, when properly fitted, it diminishes congestion by correcting the prolapse and giving tone to the connective tissue of the pelvis. If a uterus, free from peritoneal adhesion, be replaced and a sufficient support to the fascia be again brought into play, it will then be retained in position through the natural elasticity of the surrounding tissues.

HÆMOPTYSIS TREATED BY INJECTIONS OF ERGOTIN.

M. Guelliot publishes in a Rheims medical journal some notes of a case in which he injected ergotin into the lung. The patient had been suffering for two years from daily hæmoptyses, which had been treated in various ways, but unsuccessfully. Subcrepitant râles could be heard in considerable numbers three fingers' breadth above the liver in front. The man had had pleurisy twenty-two years previously. His general appearance was good, and no tubercle-bacilli could be detected in the sputum. M. Guelliot determined to try the effect of injections of ergotin in glycerin into the affected region, employing the strictest antiseptic precautions. After a few drops of the solution had been injected the patient brought up sputum of a distinctly sweetish taste, showing that the injected liquid had been absorbed. The injections were continued, the quantity of liquid introduced being gradually increased. The hæmoptysis began to diminish. The treatment had, after a time, to be stopped, as signs of bronchopneumonia developed. Ultimately the patient died. The base of the right lung was found to be in a state of gray hepatization, and there were pleuritic adhesions round all the lower half; also some tubercles at the apex. The interesting point about the case is the fact that after fifteen or twenty ergotin injections the hæmoptysis diminished in a remarkable degree.—*The Lancet*, September 3, 1887.

THE THERAPEUTIC VALUE OF SOME MEDICINES IN THE TREATMENT OF HEMORRHAGIC CONDITIONS OF THE UTERUS.

At the meeting of the American Gynæcological Society, recently held in New York, Dr. C. D. Palmer, of Cincinnati, read a paper with the above title (*Medical News*, September 24, 1887).

Referring to the fact that gynæcology has assumed a decidedly surgical tendency, he said that too little attention has been paid to the less brilliant medicinal treatment. Uterine hemorrhage can often be treated advantageously by means of drugs, such as ergot, digitalis, cannabis indica, bromide of potassium, arsenic, and gallic acid. Ergot is especially useful in cases of chronic hyperæmia and subinvolution of the uterus, attended by menorrhagia, where the organ is soft and relaxed, and of interstitial and submucous fibroids. Hemorrhages due to fungous endometritis, ovarian and parametritic inflammation are not favorably affected. Digitalis is useful in uterine hemorrhage due to cardiac disease.

Cannabis indica is an uncertain drug, acting rather upon the nervous system. Bromide of potassium is a sedative in ovarian irritation and congestion, and thus is useful in certain forms of menorrhagia, as well as in the treatment of hemorrhage from subacute and chronic pelvic peritonitis.

Arsenic acts by improving the general condition, and hence is of value in the menorrhagia of young women and at the climacteric, also in malarial conditions. He gave Fowler's solution in 3 minim doses. Active cathartics often exercise a favorable effect in checking uterine hemorrhage, especially if there is evidence of obstruction to the circulation from habitual constipation. In general, the administration of iron during the intermenstrual period is not advisable, unless the patient is markedly anæmic.

Hydrastis Canadensis has been highly recommended as a hæmostatic in uterine hemorrhage from any cause. Garrigues has obtained good results with Gossypium herbaceum, especially in cases of fibroid tumor. Hamemelis is inferior to ergot for the relief of sudden hemorrhage, but is useful in the treatment of long-continued flux, where the hemorrhage being of a passive character, the uterus is soft and flabby.

Dr. Fordyce Barker said that he had found arsenic to be a valuable drug in the treatment of hemorrhages, of excessive flow at the time of the menopause, where vaso-motor irritability was especially prominent. It exerts a direct influence upon anæmia of vaso-motor origin. He is accustomed in treating such cases to administer full doses of the bromides during the time immediately preceding the flow, giving arsenic during the intermenstrual period.

Hydrastis Canadensis is of most value if given after the flow has begun. If there is marked vaso motor irritability he adds five or six minims of the tincture of nux vomica. Viburnum is a useful drug in menorrhagia and metrorrhagia, where the hemorrhage is of a passive character, especially in early pregnancy and in threatening abortion; it is a valuable uterine sedative.

He agreed with the author as to the importance of relieving the portal circulation, which was accomplished by the use of mercury and saline laxatives. In cases where the uterus was large and flabby, iron and opium should be administered during the intervals between periods.

THE TREATMENT OF GASTRALGIA.

Sir James Sawyer states in the *Lancet* for August 13, 1887, that he has had remarkable success in the treatment of cases of gastralgia by the administration of $\frac{1}{24}$ of a grain of arsenious acid made into a pill, with 2 grains of extract of gentian, twice daily between meals. The use of this remedy must be continued for a few weeks, and, in cases of moderate severity, no other is necessary. The gastralgiac pains become less frequent and less severe, and recovery is steadily and surely attained. In the severer cases he uses some form of counter-irritant to the epigastrium, usually employing a rubefacient. In severest cases, vesication by a fly-blister is of service, and the blistered surface should be kept raw for some days by the use of a daily dressing of savin ointment. In addition to this medical treatment every hygienic adjuvant which tends to raise the strength of the patient is of value in the cure of gastralgia. When there is but little or no gastric catarrh the following dietary may be recommended:

Breakfast: bread and butter or dry toast, with some fresh white fish, or some cold chicken or game, or a mutton-chop, with a breakfastcupful of cocoa or weak tea or coffee. Dinner (1 P.M.): fresh beef or mutton, with bread, potatoes, cooked green vegetables, a fruit tart or a farinaceous pudding, with a glass of light bitter ale. Tea (at 5 P.M.): bread and butter or dry toast, with a small cupful of cocoa, tea, or milk and water Supper (not later than 9 P.M.): white fish, or some cold chicken or game, or a little cold meat, with bread, and a glass of ale.

THE PUPIL AS A GUIDE IN THE ADMINISTRATION OF CHLOROFORM.

It is always difficult to determine the exact moment at which a patient is sufficiently under the influence of chloroform for an operation to be proceeded with. The sign of conjunctival reflex action, which is usually relied upon, is very variable and often misleading. Mr. Henry J. Nelson formulates the following conclusions as a guide in this respect (*British Medical Journal*, July 30, 1887):

1. The effect produced by chloroform on the pupil is at first dilatation, varying in degree and duration, then contraction as the narcosis becomes profound, and dilatation again when the sensibility is returning. If the administration be still continued, with the pupil strongly contracted and motionless, the pupil will also dilate, but in this case more suddenly and completely, and will be coincident with a state from which it will be difficult or impossible to resuscitate the patient. This latter is the dilatation of asphyxia.

2. So long as the pupil dilates in response to excitation by pinching, etc., the patient is not sufficiently narcotized for the operation to be proceeded with, unless the latter is slight and does not require complete anæsthesia.

3. When the pupil becomes strongly contracted and immobile, no more chloroform should be given until it begins to dilate again. If, then, further anæsthesia be required, a little more chloroform should be given till the pupil again contracts.

4. The occurrence of sickness causes dila-

tation similar to, but more sudden than, that which happens when sensibility is returning, and the efforts of vomiting have the effect of arousing the patient.

The watching of the respiration and the pulse, which are doubtless the best indications of the effect produced on the individual by chloroform, and, therefore, of vital importance for safe administration, does not in many cases furnish evidence of the state of sensibility, in regard to which he holds the observation of the pupil to be of greatest assistance. The sign usually relied on, namely, the insensibility of the conjunctiva, is by no means a satisfactory test, for in many cases conjunctival anæsthesia is established long before the patient can be said to be under the influence of the drug. By observing the pupil, the administrator of chloroform can tell at once when the effect of the drug is on the wane, because the pupil then begins to dilate slowly. Noticing this, he can, by the administration of a few drops more chloroform till the pupil contracts again, prevent the occurrence of struggling and interruption of the operation. In this way he can keep the patient in the state most suitable for the satisfactory performance of the operation without narcotizing him more than is necessary. The amount of chloroform required to maintain a state of anæsthesia is much less than that required to put a patient under its influence several times, and, as it is admittedly a dangerous drug, the less administered the better, especially in operations of long duration. And by allowing the patient partially to recover, one runs the risk of the occurrence of sickness and vomiting, which is always an awkward, and often a dangerous, accident. In the absence of such a guide as the observation of the pupil, the chloroform is likely to be given in a rather haphazard way, dosing the patient till narcosis is profound, perhaps too much so, then interrupting the operation till the danger is averted by arousing him, or waiting until signs of feeling, such as struggles or a cry of pain, give indication for more chloroform.

The observation of the pupil also furnishes a fair indication of the effect produced by chloroform, its size bearing a constant relation to the state of the blood-pressure. In the experiments on dogs the blood-pressure in the carotid artery was recorded on charts, and it was found that contraction only occurred when the pressure had fallen considerably, and, on removal of the chloroform, dilatation only took place when the pressure had risen to a certain height. As reduction of the blood-pressure was pronounced by the committee of the British Medical Association to be one of the chief dangers in chloroform administration, the presence of a sign by which the occurrence of that important condition can be recognized must be of practical value.

SUTURE OF THE PATELLA.

Mr. Hector Cameron (Glasgow) read a paper before the Section in Surgery of the recent meeting of the British Medical Association, on "Suture of the Patella," with a new suggestion dealing with a shortened rectus muscle (*Lancet*, August 13, 1887). He believed that a permanently short ligamentous union was as good as union by bone. Almost all cases, however, where the union was a ligamentous one, were liable to tear. After wiring the patella he had his patients up in three weeks. He exposed the fragments, drilled opposite the centre of the fracture, used silver wire, twisted the ends and hammered them flat, and left them as a permanent clamp. Where the lower fracture was much smaller than the upper, he drilled from the lower surface. In his last three cases there was no drainage of the joint. Shortening of the rectus muscle very often occurred; and if there were any uniting bands he cut them away, and in extreme cases incised the muscle, as suggested by Mr. Rutherford. These incisions were two in number, oblique, but did not entirely divide the muscle, the portion left on one side being incised on the other.

DEATH FROM CHLOROFORM.

Kappeler, in the *Archiv f. Klin. Chirurgie*, No. 35, 1887, discusses the question whether there is any connection between death from chloroform and the development of gas in the heart. Authors differ so widely upon this point that Kappeler was led to institute an experimental study of the subject, the results of which are as follows: He found that the development of gas in the heart is a frequent occurrence soon after death, and that it often cannot be traced to any visible decomposition. This phenomenon is not peculiar to the bodies of those dying from chloroform, but it may be the case, and this must be ascertained further, that it occurs more frequently with the bodies of those dying from chloroform than from other causes. Inasmuch as this gas is nitrogen, it seems natural to suppose that its production in the heart is

a post-mortem phenomenon, attendant upon decomposition. In chloroform-poisoning, inasmuch as we do not find this production of nitrogen gas during life in the tissues, it is probably a usual phenomenon of death, not dependent on chloroform.

THE THERAPEUTICS OF THE URIC ACID DIATHESIS.

The treatment of the uric acid diathesis was made the subject of discussion before the Section of Pharmacology and Therapeutics at the Dublin meeting of the British Medical Association. The subject was introduced by DR. BURNEY YEO in an address which commanded the attention of a large auditory for nearly an hour (*Lancet*, August 13, 1887). He said he would endeavor to confine himself to the practical aspects of the question. The pathology of the condition in which uric acid was present in excess in the organism was still doubtful. Murchison regarded the liver as primarily at fault, and with this view Professor Latham was disposed to concur. According to this theory, the essential condition present was the non-metabolism of glycosin into urea. Garrod, on the other hand, regarded the kidney as the active producer of uric acid. Ebstein placed its production in the muscles and marrow of bones. Frerichs held that the essential point was the perverted metabolism of albuminoid substances into urea. Bouchard denied that the presence of uric acid in excess was the chief feature in the morbid condition in question. One thing appeared certain,—that the uric acid diathesis had its foundation in the imperfect metabolism of food, especially albuminoids. He (Dr. Yeo) would define it as "mainly a disturbed retrograde metamorphosis." Turning to therapeutics, he would point out that in all therapeutic questions three things had to be taken into account: 1, the pathogenic factor; 2, the constitutional factor; 3, the remedial factor. The two former were highly variable, and only the last had any claim to constancy. He would deal with the various remedies in detail. 1. Diet, regimen, and mode of life. There could be no doubt that, next to heredity, errors in eating and drinking were the most potent causes of the uric acid diathesis; but it was an error to assume that all gouty people had been intemperate. Ebstein regarded a tendency to obesity as a potent factor in the production of the condition, and advocated a dietary to check fat formation. He did not, however, entirely exclude fatty matters from the dietary. He allowed cabbage, peas, etc., but no turnips. He (Dr. Yeo) thought that no good results followed from prohibiting the moderate use of animal food. Senator advises a minimum of fats, and especially prohibits the yelk of egg. As regards alcohol, he thought it would be better for some persons, especially women, to abstain altogether; in others a moderate use of alcohol was not objectionable. Malt liquors and bad wines were to be carefully avoided. He regarded the cheap clarets in common use as particularly injurious. He held strongly that the *quality* rather than the *kind* of wine was the really important point. As a general rule, those wines were best which had a diuretic action. A small quantity of alkaline water might be advantageously added to the wine. Still Moselle was good, and was now much used. Exercise in moderation was important as tending to improve the general health, but it must be borne in mind that gout was very common in those who took a great deal of exercise, and that women, who led comparatively inactive lives, suffered far less than men. A warm, dry, equable climate was useful. All climatic conditions which interfered with the action of the skin were hurtful. He advised the regular use of considerable quantities of water, preferably hot water. Turning to drugs, colchicum had been much assailed of late years, but he had never observed the ill effects which some authorities attributed to its use. Garrod, Sir Thomas Watson, and Graves had all borne witness to its value. He believed that its chief action was upon the liver. It had also sometimes a diuretic and diaphoretic action. As regarded the salicylates, he could not agree with Germain Sée that salicylate of sodium was the best remedy which we possessed. The benzoates had been highly recommended, but he was not convinced of their utility. Guaiacum, in spite of the high commendation of Garrod, seemed to be generally neglected. Iodide of potassium was very useful. Alkalies were in almost universal favor, but Dr. Latham did not think highly of them. There was a disposition at present to exalt unduly the merits of lithium, in comparison with sodium and potassium. He thought bicarbonate of potassium was the most certain diuretic of the group. Magnesia and lime had been largely lost sight of, but the success attending the administration of the waters of Contrexéville (which contained large quantities of these salts) should direct our attention to them. He thought Bath was likely to be as useful as

Contrexéville, and it was a much more attractive place. The mineral constituents of the waters at these two resorts were similar.

THE TREATMENT OF MORPHOMANIA.

BALL and JENNINGS, as an extension of the work already referred to in the GAZETTE, have observed in tracings taken of the pulse of morphomaniacs, when taken soon after an injection of morphine, that the curve greatly resembles that of chronic nephritis or aneurism of a large artery,—a moderately great line of ascent, a flat summit, and a slow descent. A few moments after the injection there was a rapid ascent, a sharp angle, and a rapid fall, with the normal secondary wave. These observations led the writers to question whether a cardiac stimulant would not prove useful in lessening the suffering of morphinism, and they seem in this supposition to have been correct. The remedy which they employed was sulphate of sparteine, which, in doses of from $\frac{1}{3}$ grain to $\frac{2}{3}$ grain, produced a most favorable effect upon the heart and also the general condition of the patient. An attempt was made to use nitro-glycerin, but it was too transient in its effects, and also gave rise to unpleasant after-effects.—*Bulletin de l'Acad.*, No. 17, 1887.

CHRONIC TOBACCO-POISONING; ITS INFLUENCE ON THE HEART AND STOMACH.

FAVARGER reports, in the *Wiener Med. Wochenschrift*, No. 37, 1887, the case of a man accustomed for a long time to smoke moderately, to whom he was called to relieve a severe asthmatic paroxysm, which left the patient suffering from difficult breathing and cyanosis. When the patient was first seen he was suffering severe dyspnœa, the sensorium was not clear, the pulse was very rapid (140 to 160 per minute). The axillary temperature was 95.6° F. and 96.5° F., the radial artery was contracted, the pulse small, and both pupils narrow and reacting very little. Obstinate constipation was present. On the twelfth day of the illness a laxative produced a normal stool. On the fourteenth day the patient passed blackish, altered blood; on the twenty-first day death occurred, with symptoms of internal hemorrhage. The autopsy showed dilatation and fatty degeneration of the heart, a chronic gastric ulcer at the pylorus, in which opened an artery, and hemorrhage in the entire intestinal tract as an immediate cause of death. The patient was 60 years old. As nothing of sufficient severity to cause death was found in the body, it was considered a case of nicotine-poisoning, and the fatty degeneration of the heart was explained by the spasm of the coronary arteries produced by tobacco, producing ischæmia and fatty degeneration of the heart-muscle. The failure in circulation, following fatty degeneration of the heart, was especially predisposing to ecchymosis and erosion in the mucous membrane of the stomach, with the formation of ulcers. In addition to this it is probable that the saliva which was swallowed by the patient had a direct irritant effect upon the mucous membrane of the stomach, greatly predisposing to erosion and ulceration. Regarding the treatment of chronic tobacco-poisoning, in addition to the great point of abstinence, Favarger advises that smoking be never indulged in on an empty stomach. Inasmuch as nicotine has been found in perspiration and urine, he considers it not unreasonable that means to promote its elimination be used in treatment, such as baths, packs, diuretics, and diaphoretics.

MANAGEMENT OF ANTERIOR AND POSTERIOR DISPLACEMENTS OF THE UTERUS.

In opening the discussion on this subject before the Section in Obstetric Medicine at the Dublin meeting of the British Medical Association, DR. HALLIDAY CROOM (Edinburgh) said that he quite realized the responsibility he incurred in endeavoring to lay down definite lines of treatment in such a vexed question as that of anterior and posterior displacements of the uterus (*Lancet*, August 13, 1887). He divided them into two great classes,—(1) those occurring in nulliparous women; and (2) those occurring in parous women. In the first class he believed the displacements were entirely congenital, due either to non-development or deformity, and he strongly recommended that mechanical interference should, as a general rule, be avoided, both in anterior and posterior displacements. He believed that in the majority of cases they gave rise to no symptoms, and when symptoms of dysmenorrhœa or pelvic distress were present, concurrently with them these symptoms were due to some affection of the uterine annexa, for which mechanical treatment was utterly unavailing. He did not deny that in some exceptional cases mechanical treatment was

necessary, but these cases were so rare as not to affect the general fact. With regard to parous women, the case, he thought, was distinctly different. In many the symptoms arising from anterior displacements were due to some inflammatory process in or around the uterus, and the treatment should be directed to the removal of those inflammatory products, and not mechanically to the displacement of the uterus. With regard to posterior displacements in parous women, Dr. Croom thought that a distinction ought to be drawn. They, as a rule, were brought about mechanically, and, speaking generally, were the only forms of uterine displacement that required mechanical treatment. In the case of retroversion, if no adhesions were present, he believed that the uterus ought to be accurately replaced bimanually without the use of the sound, and retained in position by a Hodge pessary, or some other modification of that instrument. In retroflexion the Hodge pessary seemed to him inapplicable, and he believed that, as a rule, endeavors at replacement should be employed with care, and the uterus retained *in situ* with an ordinary ring pessary. In conclusion, he pointed out that there were some cases which required exceptional treatment, but in the main he advocated mechanical treatment for posterior flexions and versions only in parous women.

THE ELIMINATION OF IRON AFTER SUBCUTANEOUS AND INTRAVENOUS INJECTIONS.

JACOBI made experiments bearing on this point by examining the urine of rabbits and dogs to which he had given iron subcutaneously or by intravenous injection. He used a preparation of iron not decomposed by albumen or alkalies, a form of the tartrate. On examining the urine qualitatively with ammonium sulphate he obtained only a negative result after injecting small doses subcutaneously. When the point of the syringe was introduced into a vein, the urine gave a reaction for iron at once. Jacobi studied the elimination of iron most carefully and accurately by removing the urine from the ureters by canulæ, which conducted the fluid into small glass vessels, which were changed every ten minutes, and which were tested by sulphate of ammonium. He demonstrated by this means the fact that after introducing iron into the blood it may be detected in the urine in twenty minutes, and that its elimination continues for three hours' time. An increase in the quantity of urine excreted during the administration of iron was not observed. The quantitative estimation of the iron collected gave the result that the kidneys do not excrete more than from two per cent. to four per cent. of the quantity injected. A dog to which was given an equal quantity of nitrogenous matter and iron was found to excrete daily about 1.08 milligrammes ($\frac{1}{60}$ grain) of iron, which was determined by reducing from the ash of the urinary solids the iron with zinc, and treating it with permanganate of potassium. The same animal received iron by intravenous injection in three terminal subcutaneous veins in considerable quantities. The symptoms produced were tremors, movements of the head, loss of appetite, and lassitude. In twenty-four hours after the injection the elimination was ended. During the first day of injection the elimination was proportionate to the amount injected,—4.6 per cent. The iron injected was not given in one dose, but in several. On the third day a large dose of iron was injected, but only 1.4 per cent. was eliminated. By this was shown that the power of elimination possessed by the kidneys was very limited for any one call upon them; that the greater the number of divisions in which a given dose was given, the less the elimination became after each one. A certain amount of the iron was found to remain in the intestines of dogs, as has been observed in the case of bismuth.—*Schmidt's Jahrbuch.*, 215, 1887, No. 7.

THE PHYSIOLOGICAL ACTION OF ULEXINE.

PINET reports his researches on the action of this substance, as given in the *Archiv de Physiologie*, No. 19, 1887, as follows: He found this substance to be an alkaloid, soluble in water, crystalline, and bitter; it is derived from the seeds of the *Genista*. Repeating experiments which had been made upon frogs in England, he found that when put upon the tongues of frogs its action was to cause spasms, very much as cocaine sometimes does. In a few moments after the subcutaneous injection of $\frac{3}{40}$ of a grain of hydrochlorate of ulexine, he observed in frogs a period of disquiet, followed by convulsions, which resembled those caused by nicotine, and were elicited by disturbing the animal. Five minutes after the injection had been made, the animals became motionless, reflex motions ceased, and also respiratory move-

ments. The heart-beat persisted. After still five minutes no response was obtained on electric irritation of the central or peripheral ends of the ischiatic nerve; the heart beat feebly. After twenty-four hours there was no movement of any kind; the heart-beat was slow and weak; electric excitability of the muscles still persisted. Twenty-six hours after injection death occurred, the heart-beating is lost in attempted diastole. Other experiments resulted similarly. In studying the electric excitability, it was found that at first the excito-motor strength of the nervous centres and the nerves themselves were paralyzed. The substance influenced the nervous system and not the muscles, which could be made to contract by electric stimulation twenty-four hours after administration of the drug. Similar phenomena were also seen after the injection of ulexine when the spinal cord was severed below the medulla oblongata. Small doses, of $\frac{3}{40}$ of a grain, caused the same results, but in lesser degree, the posterior extremities being contracted in convulsions. Corneal reflexes were much lessened. Respiratory movements were very slow, but did not cease entirely; narcosis finally appeared, and, after twenty six hours, the animal was perfectly well. Doses of $\frac{1}{180}$ of a grain produced similar phenomena, without convulsions. The writer had never seen the same effects from cocaine. In frogs, from which the cerebral hemispheres had been removed, the loss of consciousness came on more slowly, after forty or fifty minutes completely, perhaps because of a slower absorption of the poison on account of the shock produced. In guinea-pigs a subcutaneous injection of $\frac{3}{40}$ of a grain produced no effect; $\frac{1}{6}$ of a grain produced, after ten minutes, somnolence and delayed motion; $\frac{3}{40}$ of a grain, when injected into the abdominal cavity, caused death from peritonitis. In concluding his experiments the writer tested ulexine as an antidote for strychnine, giving a frog first $\frac{1}{1800}$ of a grain of strychnine, and then, after a few moments, $\frac{9}{20}$ to $\frac{3}{4}$ of a grain of ulexine. The result was that the ulexine not only prevented the onset of the strychnine convulsions, but had the power of checking them when they had broken out. This antagonism is only an apparent one, however, for, if the animals survive, in a few days complete insensibility and convulsions recur. Ulexine masks the action of strychnine for a time only. The reason for this is that the action of ulexine is much more rapid than that of strychnine.

PEAT MOSS AS A DEODORIZER.

Dr. D. M. Uspenski, in a preliminary note in the *Vrach*, describes a number of bacteriological and other observations he has made on a kind of peat moss belonging to the sphagni, which is indigenous in many parts of Russia and Siberia, and which is used with considerable success in the form of coarse powder for disinfecting cesspools and privies in Warsaw, Riga, and other towns. It is found that about four ounces sprinkled over an ordinary stool is sufficient to deodorize and dry it, so that the receptacle can be emptied and cleaned at proper intervals without any unpleasantness arising. This substance seems to have a wonderful power of absorbing moisture, for it was found by experiment that a pound of it which already contained twenty-five per cent. of water was capable of absorbing no less than seven pounds and a half more water. When added to fecal matter in the proportion of ten per cent. by weight, it changes it into an almost dry mass of an earthy appearance, devoid of smell and easy to remove. A hundred pounds of the powdered moss will absorb fourteen hundred and thirty-eight litres of ammonia. The dry mass obtained by the action of the moss on fæces, on being analyzed by Mr. Miltser, was found to contain from 2.38 to 2.66 per cent. of nitrogen and from 0.96 to 1.15 per cent. of phosphoric acid, and of course formed a very valuable manure. The powder as received contained 23.9 per cent. of water and 5.38 per cent. of ash, and without any preliminary drying they absorbed fourteen times their own weight of water. Bacteriological experiments proved that the moss has a great capacity for diminishing micro-organisms of various kinds. If this substance can be easily and cheaply obtained, it would appear to offer advantages over the dry earth we are accustomed to use, and in large towns would doubtless prove very valuable.—*Lancet*, September 10, 1887.

THE PHYSIOLOGICAL EFFECTS OF RED COLORING MATERIALS EMPLOYED IN COLORING FOOD-STUFFS.

Arloing and Cazeneuve have made experiments to ascertain the toxicity of coccellin and a Bordeaux-red, which are employed to color nitrogenized food-stuffs. The innocuousness of these substances may be inferred from the fact that as much as 18 grammes (℥ivss) was injected into the blood of a dog without a fatal effect. The organs of cir-

culation and respiration were, however, very greatly affected. The heart's action was much weakened, the small blood-vessels paralyzed, and the inspiratory movements almost abolished. First to fail was the vaso-motor system; then the respiratory apparatus and the heart were attacked. If still more of the substance was injected, death from heart-paralysis followed. An analysis of the gases contained in the blood showed the processes of oxidation after the injection into the blood but little affected. When these substances were fed to animals for a long time they were absolutely harmless. Post-mortem examination of animals which died after taking the substance showed in the internal organs nothing whatever abnormal. The use of these substances to color sweetmeats and liquors, and other allied food-stuffs, Arloing and Cazeneuve consider justifiable, while, on the contrary, other injurious coloring-matters are to be expressly forbidden.—*Bulletin de l'Académie*, No. 17, 1887.

A CASE OF EXTRA-UTERINE PREGNANCY CURED BY LAPAROTOMY.

SCHUSTLER reports, in the *Wiener Medicinische Wochenschrift*, No. 37, 1887, the case of a woman, aged 33, who was admitted into Von Dittel's clinic for the treatment of an abdominal tumor. She supposed herself pregnant, but all the usual signs of pregnancy were wanting. A diagnosis of a tumor proceeding from the internal genitalia, and probably a multilocular ovarian cyst, was made. When laparotomy was performed, the case was recognized as an extra-uterine pregnancy, whose sac contained a decomposed, fully-developed fœtus. The mass was removed, the placenta not being recognizable. An attempt to remove the entire sac failed, on account of its connections with the abdominal viscera. Its walls were, however, stitched to the edges of the abdominal incision, and its cavity was filled with iodoform gauze, and a drainage-tube was brought out at the external wound. The further progress of the case was entirely favorable. The sac suppurated freely, and many pieces of necrotic tissue were discharged, which were thought to be pieces of placenta which had decomposed. The patient made a good recovery in about three months. The writer considers that the great danger which the presence of a dead and decomposed fœtus, when developed outside the uterus, occasions to the pregnant woman, is full warrant for resorting to laparotomy to remove the danger. This is especially true when the condition of the patient is so good as to lead to the hope that an operation will be successful, and when the condition of the case will not admit of delaying until the decomposition of the fœtus and the peritonitis, which it occasions, have rendered an operation hopeless.

THE LOCAL TREATMENT OF AFFECTIONS OF THE BLADDER.

ULZMANN, of Vienna, critically reviews the use of the vesical douche, and reaches the following general conclusions and rules for practice. First, he excludes from treatment by the vesical douche all acute affections of the bladder: such diseases, if they heal at all, do so with dietetic and medicinal treatment. In chronic inflammations of the bladder we must discriminate whether the trouble is primary and isolated, or whether in addition to the bladder the vesical neck, posterior urethra, or prostate is affected. If the latter be the case, as in young men who from gonorrhœa contract chronic vesical catarrh, the neck of the bladder and the posterior urethra must be included in the treatment. This is best accomplished by introducing a soft catheter or small silver catheter in the bladder and then withdrawing it about an inch, so that the point of the catheter is in the neck of the bladder: with a small syringe the solution is slowly injected. The fluid enters the bladder but does not return into the catheter, as its fenestra is closed by the neck of the bladder. After all has been injected the catheter is withdrawn, and the patient empties the bladder spontaneously. If, on the other hand, the bladder itself is implicated, the fluid is injected through a catheter giving a double current and allowed to return. As the bladder is contracted, but a small portion of its mucous membrane will be reached by the fluid. It is best to inject the fluid through a soft catheter, using a syringe held in the hand. When irrigators are used too much fluid is introduced, and if the bladder is weak it may be dilated. Only in rare cases of contracted bladder in young persons is this method useful. The precaution must also be taken to empty the bladder thoroughly after each injection. When possible, it is best if the patient stand during the irrigation. For irritable bladder Ulzmann advises lukewarm water with tinct. opii, cocaine one-fourth per cent., resorcin one-half per cent., carbolic acid one-sixth per cent. when espe-

cially irritable. When the urine has undergone ammoniacal decomposition, solution of potassium permanganate one-tenth per cent. or three drops of amyl nitrite to a pint of water are recommended; for phosphaturia one-tenth per cent. salicylic acid is advised. —*Centralblatt für Chirurgie*, No. 30, 1887.

ABSENCE OF FREE HYDROCHLORIC ACID IN THE GASTRIC JUICE.

The diagnostic value of the absence of free hydrochloric acid in the gastric juice in cases of malignant disease of the stomach is discussed at some length in a recent paper by Dr. V. G. Nechaieff, of St. Petersburg. For the detection of free hydrochloric acid no less than thirteen different tests have been proposed. Of these he considers the following to be the most useful: 1. A solution of tropeolin in water, as proposed by Edinger; this has of itself a yellow color, but when brought into contact with a solution containing 0.01 per cent. of HCl it becomes a dark cherry-red. 2. Methyl violet becomes blue on the addition of 0.025 per cent. of HCl. 3. Congo paper shows a blue tinge on being immersed in a solution containing 0.025 per cent. of HCl. 4. A mixture of three drops of liquor ferri perchloridi with the same quantity of carbolic acid in twenty cubic centimetres of water shows the presence of lactic acid or its salts by becoming yellow; but if free hydrochloric acid is also present the reagent becomes colorless. This is therefore an excellent test for free hydrochloric acid when lactic acid or the lactates are present. Dr. Nechaieff advises that all these tests should be applied in each case. He found that in cases of carcinoma of the stomach, and apparently in carcinoma of the œsophagus, absence of free hydrochloric acid constituted the rule, and its presence the exception, and is disposed, therefore, to think that its absence affords a practically useful diagnostic sign in cases where cancer of the stomach or œsophagus is suspected. Thus, in seven cases of carcinoma of the pylorus, though one hundred and forty-two examinations were made, free hydrochloric acid was never found, though lactic acid invariably existed; and again, in one hundred and five examinations of four patients with carcinomatous stricture of the œsophagus, no free hydrochloric acid could be detected. In a case of cancer of the rectum, however, the presence of free hydrochloric acid in the contents of the stomach was very distinct.—*The Lancet*, June 4, 1887.

THE TREATMENT OF ACNE.

Brocq recommends as essential in the treatment of this disease the free use of hot water, alone or with camphor (alcoholic solution) or cologne. In addition he gives the following formulæ, which he has found of service in his own practice:

℞ Hydrarg. bichlorid., gr. xv;
Alcohol, ʒiss to iii;
Aquæ rosæ, ʒivss or iii.

This solution may be diluted as required by hot water. The following is an ointment used by Hebra:

℞ Sulphur. precipitat.,
Potass. bicarb.,
Glycerin,
Aquæ lauro-cerasi,
Spts. vin., āā ʒii.

This is applied during the night; on the morning following it is removed by washing in warm water, and during the day a protective paste like the following is used:

℞ Zinc. oxid. pulver., gr. xxx;
Vaselin. pur., ʒvi¼.

At the hospital of St. Louis this sulphur paste is a favorite application:

℞ Sulphur. precipitat., ʒiii¾ to ʒviiss;
Alcohol. camphorat., ʒviiss;
Aquæ ros., ʒiii½;
Aquæ destill., ʒiv⅞.

This is also used at night, and an oxide of zinc ointment is used during the day.—*Revue Générale de Clinique et de Thérapeutique*, July 14, 1887.

ICHTHYOL IN SURGERY.

Lorenz, surgeon to the Alexander III. Uhlan Regiment, describes his studies with this substance in surgical practice, and their results, as follows in the *Deutsche Medizinal-Zeitung*, No. 59, 1887. The writer has extended his use of this substance, and has treated not only superficial lesions, but also wounds and deeper losses of substance. As an important means of treating these cases he has used cold applications, in some cases an ice-bag, but generally cold compresses, which are changed every ten minutes if needed, and later every two hours. As a substitute for the cold compress, and an adjuvant, especially where an instantaneous use is needed, ammonium sulpho-ichthyolicum has been found to produce its effect more quickly and surely. Pain and swelling dis-

appear after one to three inunctions, and the patients can resume their journey when the condition of the lower limbs admits. The application of ichthyol allows the injured part to remain undisturbed, as it need not be renewed so often as compresses.

The mode of application is as follows: the limb is thoroughly cleansed with soap and water, and thoroughly and completely dried. Ichthyol in solution or in ointment is then rubbed in, but friction is not continued as long as with other ointments, as it is not necessary, and the limb is then bandaged with cotton fastened by an ordinary bandage. If it is impossible to first wash the part, the inunction with ichthyol may be done at once. These applications may be repeated two or three times daily, care being taken in removing the dried and accumulated ichthyol that the newly-formed cicatricial tissue may not be destroyed in cleansing the part. In comparing the length of time occupied in cures by ichthyol with that given up to hydrotherapy, ung. cinerea, and other commonly-used substances, it was found that the former needed only two-thirds of the time which the ordinary treatment required. Four cases are reported of serious lesions which were successfully treated. The first of these was a severe lacero-contused wound of the foot, to which ichthyol was applied ten hours after the injury was received. Four applications were enough to secure a cure; the swelling at the point of injury subsided entirely, and a slight weakness which supervened was gone in three or four days. A second case, of a serious wound of the hand, was relieved after six inunctions of ichthyol. A third case was that of an injury by a kick from a horse, producing a severe injury to the knee, which was treated at first by the application of cold and by rest. The knee did not improve, but became greatly swollen and very painful. Inunctions with ichthyol three times daily were made, and a series of measurements of the affected joint were taken. It was seen that a progressive diminution in size and sensitiveness followed. The treatment by ichthyol was alternated with hydrotherapy, with immobilization, with plaster of Paris bandages, and with electrical treatment. The final result was cessation of pain and cure by anchylosis. In wounds of minor character the following ointment has proved useful, either rubbed directly into the wound or laid upon it spread on bandage material:

℞ Ichthyol, 1 part;
Ung. paraffini, 70 parts.

In the excoriations common among children, and in all solutions of the continuity of the skin from which they often suffer, ichthyol is of great utility applied immediately after bathing. It causes at first a slightly burning sensation, but this is succeeded by cessation of all pain and irritation. It may be conveniently used in this ointment:

℞ Ichthyol, gr. iii;
Ung. paraffini, ʒxxv;
Cumarini, gr. viii to gr. xv.

In burns and frost-bites a one per cent. salve of ichthyol and vaseline speedily relieves the burning pain and furthers cicatrization. In severe burns a watery solution, from two to ten per cent., is useful in allaying pain. In acute coryza, inflammations of all kinds upon the mucous membrane or skin of the nose, and in furuncles in the nostrils, a mixture of one to ten per cent. of ichthyol and vaseline may be applied, and gives great relief. In facial erysipelas the writer had the most satisfactory results with the continued use, at hourly intervals, of

Ichthyol, ʒv;
Ether,
Glycerin, aa ʒiiss;

which was applied with a camel's-hair pencil. While the remedy is not a specific, still it exercised a prompt and potent influence. Nussbaum reports five cases of erysipelas which were promptly cured by ichthyol and vaseline. There is as yet no ground for believing that ichthyol possesses antiseptic properties. If a wound be perfectly aseptic the application of pure ichthyol can introduce no element of danger, and will greatly hasten healing. It seems probable, however, that it may be combined with an antiseptic in such a manner as to be applicable to wounds as an immediate dressing. It would be an excellent prophylactic dressing against erysipelas, and in this respect an important field may be open for it. It should not be applied to wounds secreting freely with cotton, as the secretions of the wound become matted into the cotton, and drainage and disinfection are greatly hindered. It is best used in solution or in ointments, or, when indicated, in ichthyol plaster, the last but rarely. The preparation best adapted for general use is the combination of ichthyol with paraffine ointment, 1 to 70.

THE INFLUENCE OF MYDRIATICS AND MYOTICS UPON INTRAOCULAR TENSION IN NORMAL CONDITION.

STOCKER, in the *Archiv für Ophthal.*, xxxiii. 1, 1887, reports his recent observations with a manometer on the influence of the mydriatics and myotics in rabbits' eyes. His results differ from those given in text-books not only in the statement that the action of the pupil stands in a relation of cause and effect with the intraocular tension, but also that atropine increases the internal tension of the eye, that eserine lowers it, etc. His conclusions briefly stated are as follows:

1. Atropine, with animals curarized but not narcotized, slowly reduces intraocular tension (six millimetres).

2. Cocaine (two to three millimetres) lessens intraocular tension.

3. Both of these mydriatics do not influence the curvature of the cornea.

4. Eserine increases primarily the tension in an eye in physiological condition (three millimetres). Secondarily, the tension is lessened: this secondary lessening is greater than the primary increase (four millimetres).

5. Pilocarpine increases considerably at first the intraocular tension; afterwards it is slowly lessened.

6. Both of these myotics shorten the corneal curvature.

THE TREATMENT OF PRURITUS OF THE VULVA.

DR. H. VON CAMPE, of Hanover, reports in the *Centralblatt für Gynäkologie*, No. 33, 1887, the following case, which illustrates the value of electricity in this most troublesome affection. Two years ago the patient, aged 53, came under the observation of the writer complaining of obstinate itching about the genitalia and anus She had borne four children, and had aborted twice at three months. Some years previous the uterus had been curetted for disease of the endometrium, which caused frequent menorrhagia. Since this was done she had been annoyed by a persistent discharge, which had so irritated the parts that an eruption attended by intense itching had followed. The patient had tried all methods of treatment, even allowing the excision of a portion of mucous membrane which itched most severely, but without avail. When she came into the care of the writer she had not been treated for some time, having exhausted her resources and patience. Treatment by Unna's method, of salicylic-acid salve and cocaine, gave only temporary relief. The vulva and adjacent parts remained a livid red, the elasticity of the skin was greatly diminished, and lesions caused by scratching were present. The discharge from the vagina was not great in quantity, and of a feeble acid reaction. The uterus was atrophic. The urine contained no sugar and no albumen. No signs of syphilis were present. The failure of other procedures led the writer to try electricity, and accordingly the galvanic current from six elements was used, the anode being placed in the vulva and the cathode upon diseased portions of the integument; the current was continuous. The applications lasted ten minutes. In addition, vaginal injections of weak, lukewarm carbolized solutions were made morning and evening. The result of the first application was cessation of the itching for several hours. The treatment was continued daily, intermitting at times, and increasing the number of elements to ten, for over a month, when the patient's condition was sufficiently good to warrant a cessation of the treatment. At this time only a sensation of slight itching and burning was present. The patient was able to sleep nearly all night, and to refrain from scratching and irritating the parts. The success in this case proved permanent after two years' time, and the writer felt himself justified in calling attention to this mode of treatment as one rational, uninjurious, and likely to prove of benefit in these intractable cases. It is at least worthy of a further and more extended trial.

ANTIFEBRIN IN THE TREATMENT OF LANCINATING PAIN.

FISCHER, of the Hospital for Nervous Diseases at Cannstatt, reports his observations in the use of antifebrin in the treatment of lancinating pain, in the *Münchener Medicinische Wochenschrift*, No. 23, 1887, as follows: Following the suggestion of Lépine, the writer treated ten cases of tabes dorsalis, on whom eighty or ninety observations were made. In general the results were most satisfactory, and corroborated the statements of Lépine fully. Among the ten patients the remedy failed in its effect only once; in the other cases its effects were prompt and powerful. Untoward effects in the eighty observations made for the relief of pain by antifebrin were present in only two instances, and these were exceptional among patients who formerly and afterwards were benefited by the drug. The writer felt justified in concluding that anti-

febrin is a specific remedy for the lancinating pains of tabes, whose effect, however, is not always uniform, nor constant, with the same patient at different times; the painful crises of tabes were generally favorably influenced by the drug. In long-continued use of the drug ill after-effects were not observed. A mild grade of cyanosis was observed in one case. All reported that very shortly after taking the remedy a pleasant, comfortable sensation of warmth pervaded the entire body. As many of the patients were ambulatory cases, it was impossible to make systematized observations on the pulse. The fact that the cases treated were not suffering from fever, and were without disease of the circulatory organs, explained the absence of ill after-effects with comparatively large doses. It is considered best to give to tabetic patients larger doses than would be indicated for those suffering from pyrexias: Lépine regards 30 grains as permissible. The effect of the drug was manifest, as a rule, from thirty to ninety minutes after the administration of the first dose (¾ grain). If no effect follows this dose, a second small dose is given. The remedy resulted best in cases in which it was given to relieve a well-marked paroxysm. The results obtained in the treatment of neuralgias and migraine seem to indicate that all paroxysmal pain is especially susceptible to treatment by this remedy. Patients whose pains were like lightning from a clear sky, disappearing in a few moments as suddenly as they came, were not benefited by the drug: the point of influence for antifebrin seems to be wanting in these cases. The writer does not hesitate to use the remedy in broken doses in the treatment of chronic neuralgias, especially those of spinal origin, and the girdle sensation of tabes, especially as its effect is not lessened by an acquired tolerance. He gives his patients powders containing three and three-fourths grains, instructing them to take two powders when an attack of pain threatens, and, if needed, more. It is best to drink wine or cognac after the powder is taken. In other diseases characterized by paroxysmal pain, as in hemicrania, the drug has a positive influence. In addition to the treatment of tabes, the writer has given it as a nervous stimulant in fourteen cases. He obtained good results in (1) a case of syphilitic occipital neuralgia, which had resisted a persistent course of treatment by inunction. (2) In a case of specific dementia paralytica, with very severe nocturnal pains in the bones. (3) In three cases of headache complicating severe anæmia. (4) In four cases of hemicrania or vaso-motor cephalalgia. In two of the cases typical migraine was present, and the patients, who were not hysterical, recognized the prodromata, and calculated the course of the attack sufficiently accurately to use the remedy as a prophylactic and also aborting remedy, with remarkably successful results. Negative results were obtained in five cases: 1. In a severe sciatica through disease of the veins; 2. In hysteria; 3. In dental neuralgia from caries; 4. In brachio-intercostal neuralgia in old men; 5. In a case of rheumatic neuralgia. Fischer repeats the account of Cahn's cases in the clinic at Strassburg. In two cases of gastric crises in tabes one was observed, after long-continued use of the drug in large doses, to suffer from cyanosis, and in the blood the presence of methæmoglobin. The urine contained an abundance of free SO_4H_2. The blood-changes, however, occasioned the patient no inconvenience.

In a third case of gastric crisis the remedy had very little effect. Two cases of migraine were cured. A long series of headaches from various causes were promptly relieved by antifebrin. A good result was obtained in a phthisical patient who suffered from acute multiplex neuritis. In a case of obstinate pruritus, complicating carcinoma of the liver, the drug was useful in long-continued large doses. In pruritus senilis it had a limited value only.

A CASE OF CHRONIC PERITONITIS HEALED BY SPONTANEOUS PERFORATION.

HOCHHAUS reports in the *Deutsche Medicinische Wochenschrift*, No. 20, 1887, the following case: A little girl, 5½ years old, had lost appetite for two months; digestion was painful, accompanied by regurgitation, and often by vomiting; the borders of the abdomen were sharply outlined; diarrhœa and constipation alternated. The child lost weight steadily, while the abdomen was excessively distended. On admission to the hospital, the abdomen was found painful on palpation; the percussion-note dulled to the umbilicus, and fluctuation evidently present. In the days immediately following admission intense fever, with evening exacerbations, vomiting, and diarrhœa, followed. A diagnosis of tubercular peritonitis was made. After several days the swelling evidently pointed near the

umbilicus; the abdomen retracted in several directions, the point of greatest prominence at the umbilicus became red, and changes in the areas of dulness indicated that perforation was imminent. Surgical intervention was abstained from, and about eight days after admission to the hospital perforation occurred, and the discharge of half a pint of purulent liquid. The opening was enlarged, an additional pint of pus evacuated, and drainage and an antiseptic dressing were instituted. The temperature fell at once; dulness disappeared, and cure followed. Such cases are extremely rare; but examples of cure after spontaneous rupture of the abdomen have been reported by Galvagni, Rehn, Bauer, Henoch, Leyden, and recently by Fiedler and Rossi.—*Revue Mensuelle des Maladies de l'Enfance*, September, 1887.

THE DIURETIC EFFECT OF SALICYLIC ACID.

The following is an abstract of a full paper on this subject by DR. ARMIN HUBER, of the medical clinic at Zürich, contained in the *Deutsches Archiv für Klinische Medicin*, Band 41, 1 u. 2 Heft. The diuretic effect of salicylic acid was noticed in Professor Eichhorst's clinic, where it was given for rheumatism, and where it is the custom of the clinic to observe the amount of urine passed by each patient. Fleischer, Baelz, Gubler, Robin, Sassitzky, Bauer, Künstte, Von Maurel, and Currier have observed and reported this property of the drug. The writer conducted a series of observations upon rheumatic patients who were taking salicylic acid. In twenty-five cases whose histories he carefully analyzed, twenty-one, or eighty-four per cent., showed an increase in the secretion of urine immediately on taking salicylic acid, which promptly ceased as soon as the drug was withheld. In four cases, or sixteen per cent., the diuresis continued during the days when no medicine was given. The drug was given in doses of from 45 grains to 2 drachms in twenty-four hours, and the connection between the drug and the diuresis was very evident. In a subsequent series of nineteen cases of pleurisy and other non-rheumatic affections, diuresis was increased in 89.41 per cent.; in 8.23 per cent. lessened; in 2.35 per cent. it was uninfluenced. The average increase in diuresis with those patients so affected was more than a pint. Regarding the influence of the remedy upon losses by perspiration and expiration, in fourteen cases on whom such observations were made nine showed diminished loss by these avenues, while five lost more weight by perspiration and expiration on the days when no salicylic acid was taken. The total loss of weight from all causes was greatest under the use of the drug, and hence it is claimed as a diuretic. The doses were generally 15 grains hourly, beginning at 9 A.M.; 60 grains were often given in four doses each quarter of an hour. A series of observations on the effect of the remedy in typhus abdominalis showed that the quantity of urine was increased in 57.1 per cent. of the cases, lessened in 35.7 per cent., and uninfluenced in 7.1 per cent. A comparison of these results with the nineteen cases which preceded indicates that in typhus abdominalis the diuretic effect is much less than in other diseases: this result is not a lessening in the quantity of urine secreted, but the absence of the usual diuretic effect which follows the use of the remedy. In chronic pulmonary tuberculosis a series of five observations and twenty-three single tests showed an increased secretion of urine of 65.2 per cent. To determine the effect upon the solid constituents of the urine observations were made on cases of articular rheumatism, pleuritis, and typhus abdominalis, in nearly all of which the quantity of solid matter excreted was increased. In regard to the specific gravity, the increase in the amount of urine passed was attended by a lowering of the specific gravity. Observations made with Marey's sphygmograph upon those who were taking the salicylates showed that the pulse-rate was slowed during the use of the drug. In cases of pleuritic effusion the effect of the salicylic acid was especially marked as a useful diuretic, and the result obtained in lessening the exudate was so marked that its further use was indicated as a diuretic. In all conditions in which obstruction to the circulation exists the salicylates were found most efficacious. In connection with the treatment proposed by Oertel, in one case a gain of fifty per cent. in the quantity of urine passed was observed after the use of the remedy. It was found best to give it intermittingly, pausing for one or two days; and in this way on the day following administration the characteristic diuresis was produced. In combination with decreased consumption of fluid and other hygienic measures the administration of salicylates as diuretics promises results of value, and is certainly worthy a more extended and thorough trial as a diuretic.

COCOAINE IN THE TREATMENT OF SKIN-DISEASES AND SYPHILIS.

DR. S. LUSTGARTEN, of Professor Kaposi's clinic in Vienna, writes as follows on this subject in the *Wiener Medicinishe Wochenschrift*, No. 12, 1887: The effect of the external application of cocaine to the normal skin is almost nothing; but if the external horny layer is excessively thinned or removed, cocaine comes in contact with the nerves of the skin and produces its characteristic effects. From these facts he derives three indications for the use of cocaine:

1. In eczema. In this disease we can consider only the acute and subacute forms with abundant vesicular, strongly-itching pustules. In such cases the application of a two per cent. solution, once or twice in twenty-four hours, produces a great remission in the itching. An especially valuable part is given to cocaine in the treatment of eczema of the genitals and anal region where the epidermis has become macerated by long-continued perspiration and secretion. In such cases the subjective symptoms, itching, burning, etc., often reach a great degree of severity. Cocaine, with the employment of lukewarm sitz-baths and ablutions with pure soaps once daily, generally produces great relief. Lustgarten prescribes,—

℞ Cocaini aleinici, gr. vi to xv;
Lanolini, ʒiv½;
Olei olivar., ♏xxx. M. f. ungt.

Sig.—To be rubbed thoroughly into the affected parts twice in twenty-four hours for several minutes; apply powder afterwards.

In pruritus ani, in addition to the above, suppositories of three-fourths of a grain of cocaine may be used with excellent effects.

2. Ordinary salves or lanolin ointments with one per cent. of cocaine are recommended in skin-diseases attended by considerable loss of substance with great pain. This treatment is especially useful in the effects produced by escharotics containing pyrogallic acid or arsenic, in gangrenous herpes zoster, etc.

3. In the form of a two per cent. watery solution frequently applied, the external use of cocaine muriate is very useful in rendering the application of nitrate of silver to granulations otherwise painful devoid of suffering. The granulations become pale very rapidly, and the silver nitrate when applied over them is not felt. In a great number of cases cocaine may also be used with advantage subcutaneously. An injection of the following solution has been found most useful:

℞ Cocain muriat., gr. viii;
Acid. carbol., gr. iii;
Aq. destill., ʒii½,

and this may be given in several points into the rete mucosum, or may be given in one single injection. The addition of carbolic acid makes the cocaine solution permanent. In fifty cases so treated, on whom minor surgical operations were made (circumcision, extirpation of epithelioma of the lip, atheroma, etc.), the results were most satisfactory. It may be useful in this connection to mention that two applications of this solution, applied by a brush, are sufficient to anæsthetize a circular area of two centimetres (about one-sixth of an inch) in diameter. A further occasion for the application of cocaine is to render painless the subcutaneous use of mercury and arsenic. This is especially applicable in the injection once weekly of calomel and tannate of mercury. To render this painless, half of the contents of an ordinary syringe is sufficient. After the cocaine injection has been made the canula remains *in situ*, and through this canula the calomel suspension is injected. When cocaine is added to the preparation of mercury before injection, the compound is decomposed. Although three fourths of a grain of cocaine by subcutaneous injection is generally well borne, yet a sufficient number of cases in which untoward results followed have been observed to render the exercise of caution necessary. Lustgarten reports three cases in which after such injections very noticeable ill after-effects were observed.

ANTIFEBRIN AS A NERVINE.

According to the Paris correspondent of the *British Medical Journal*, August 20, 1887, at a recent meeting of the Société Vaudoise de Médecine, DR. PAUL DEMIÉVILLE, of Lausanne, read a paper on "Antifebrin as a Nervine Remedy." He had used the drug in eleven cases of sciatica, eight of lumbago, seven of intercostal and mammary neuralgia, eight of trigeminal neuralgia, eleven of headache (megrim, dyspeptic and chlorotic cephalalgia, etc.), three of neuralgia of the forearm and hand (probably identical with "ulnar neuralgia," described by Dr. McNaught, of Rossendale, in the *Journal* of April 30, 1887, p. 933), seven of painful menstruation, two of senile gangrene, three of tabes, six of epilepsy, cancer, nettle-rash, hepatic colic, etc. The remedy was given (in adults), as a rule,

in ½-gramme doses, from one to four times daily; if that failed, ¾ of a gramme, and even 1-gramme doses were given once, twice, or thrice a day. On the whole, Dr. Demiéville is satisfied that antifebrin is invaluable as an anodyne. In painful affections the drug scarcely ever fails to give marked relief, the pain disappearing within a period varying from a quarter of an hour to two hours. Its sedative action is very often accompanied by a decided hypnotic effect, which is extremely welcome in cases in which pain is associated with obstinate sleeplessness. In a certain proportion of cases the anodyne effects are only temporary. In other cases relief lasts for a more or less prolonged space of time, a new attack yielding to another course of the drug. But in many cases a complete cure is effected within a couple of days or so. As an anodyne, antifebrin is recommended by the author especially for the relief of the agonizing pain of senile gangrene and cancer. The drug seems to diminish the frequency of fits in epilepsy; at any rate, it had this effect in five out of six such cases in which it was tried by Dr. Demiéville. He recommends it also in hysterical fits and in infantile convulsions. When used for a considerable period, as, for instance, in incurable cases of organic disease, the drug loses its effect somewhat in time; on being discontinued, however, for some days, it seems to recover its activity. With regard to secondary effects, Dr. Demiéville states that he has never known it to produce rigors or noises in the ears; but he has sometimes observed diaphoresis and slight giddiness, and once (in a drunken epileptic, aged 51) delirium and hallucinations resembling those of salicylism. As a rule the drug is well borne by healthy digestive organs, but in certain cases of gastric disturbance it may give rise to temporary loss of appetite and dyspepsia, more rarely to nausea and vomiting, and possibly to diarrhœa. In one case lachrymation and a pricking sensation about the eyes were complained of after several 1-gramme doses had been taken.

ETIOLOGY OF DYSENTERY.

Professor Jaroslav Hlava, of Prague, has examined (*Pizeglad Leharski*, February 12, 1887) the stools and the intestines, with their contents, in sixty fatal cases of epidemic dysentery, two of sporadic and ten in which the disease occurred as a complication of other affections. Recent stools from dysenteric patients were injected into the rectum or duodenum in seventeen dogs, six cats, eight rabbits, and in hens and guinea-pigs. In addition to this, seventy injections of pure cultivations of various bacteria which had been found in stools and intestinal contents were made. From those extensive observations Professor Hlava was led to the following conclusions: 1. Bacteria are not the cause of dysentery, since the disease cannot be produced in animals by introducing into them any microbes found in persons suffering from the affection. A simple passing intestinal catarrh is all that can be induced in that manner. 2. The injection of stools gives rise to dysentery only in cats. 3. There is no specific anatomical difference between epidemic and sporadic dysentery. 4. There are present in the stools (and sometimes in the mucous and submucous coats of the bowel) long or oval amœbæ with a granular protoplasm, which move about under the objective glass for ten hours. In sixty-five cases the amœbæ were very numerous. Dr. Hlava is now studying the question of their relation to the disease.—*Brit. Med. Journ.*, August 20, 1887.

THE TREATMENT OF WHOOPING-COUGH WITH RESORCIN AND THE PNEUMATIC CABINET.

Dr. Arntzenius reports in a recent number of a Holland journal (*Weekbl. von het Nederl. Tjidschr. voor Geneesk.*, No. 67, 1887) his experience in the treatment of whooping-cough by resorcin. The number of remedies for this disease he admits to be legion; but, encouraged by the results obtained with this method by Moncarvo, of Rio de Janeiro, he undertook the treatment. He applied a watery one per cent. solution to the fauces and nares, and had excellent results in seventy cases. Arntzenius had been surprised that the use of compressed air and the pneumatic cabinet had not been combined with treatment by drugs. The reason was that in so few cases is a cabinet accessible. In eleven cases which he treated by the combined method, a cure followed after sixteen sittings. It was noticeable that after the first application the general condition was greatly improved, the anorexia was much lessened, sleep was more quiet, the paroxysms of coughing became less frequent and less severe. When a paroxysm occurred, the child's condition was soon restored again. All exhibition of drugs internally was discontinued during this treatment. The sequelæ which so often occur and are so injurious were never seen to follow

this treatment. The writer considers the influence of the compressed air, by reducing contraction by mechanical means, is more important than any effect on the micro-organisms of the disease.

ANTIFEBRIN.

DR. HERCZEL, of Heidelberg, writes as follows on this subject in the *Centralblatt für die Medicinischen Wissenschaften*, No. 30, 1887: The experiments of the writer have shown that the influence of antifebrin is not only upon temperature but also upon the circulation of the blood and the nervous system, and that it is in these directions that the evil effects of the drug are manifested when the dose is too high. It was found that rabbits behaved very differently to the same doses given hypodermically or by the gastric tube, and at different times. By the first experiments animals given doses of 15 to 25 grains showed little effect of the drug, probably because it was given on a full stomach. When the same dose was given in a warm watery solution subcutaneously, the symptoms produced were much more pronounced. It was found that antifebrin dissolved in the proportion of fifteen grains to two ounces of water at a temperature of 102.2° F.; and in twenty or thirty minutes after this quantity was injected under the skin of the back the reflexes of the lower extremities were impaired, tremors began which in the course of the next half-hour became periodic convulsive movements, which extended over the whole body. The blood-vessels of the ear were markedly contracted; the retinal vessels were not hyperæmic; the respiration was superficial and frequent. In ninety minutes after the intoxication was established all reflexes were abolished, the last being the corneal reflex. The bodily temperature sank, in spite of all possible means to maintain it, to 84° F.; respiratory movements only persisted. In spite of these profound disturbances the rabbit recovered in ten to twelve hours; the temperature remained several degrees below the normal for several days. If the subcutaneous dose was raised above 12 grains for each two and one-half pounds of body-weight, the reflexes were abolished in five or ten minutes. Respiration was at first very frequent, then irregular, superficial, at times ceasing entirely. Motor reflexes were entirely wanting; retention of urine occurred; in from sixty to ninety minutes coma, a marked fall of temperature, and general paralysis preceded death. Artificial respiration could not prevent the paralysis of the respiratory centre. Post-mortem examination showed the bladder distended with urine; the heart had ceased to beat in diastole. If the animals lived longer and continued to take the drug, fatty degeneration of the heart, liver, and kidneys occurred. Sections of the liver, treated by ammonium sulphate, or by ferrocyanide of potassium and hydrochloric acid, showed no reaction for iron.

The blood of the animals experimented on appeared, after one or two hours, to be greatly altered. Macroscopically it was reddish black; spectroscopically it gave a doubtful methæmoglobin line. With the symptoms which preceded death there went hand in hand a marked diminution in the oxygen of the blood. Under the microscope the red corpuscles were seen not in their usual *rouleaux* form, but thinned, somewhat granular, not adhering as normally. Their number was not greatly altered. The number of white corpuscles was somewhat reduced in the first stages of the effects of the drug; in the later stages increased. The hæmoglobin contained in the blood of animals experimented on was reduced from ten to eighteen per cent., and even more when the use of the drug was continued. In the blood of dogs especially, to which antifebrin was given continuously in large doses, a variable quantity of dissolved coloring-matter was found in the blood serum. A test of the reaction of the blood showed a diminution in its alkalescence. The first urine voided after the intoxication was established was acid, neutral, or rarely alkaline, dark brownish yellow, with a yellowish foam. In three cases a small amount of albumen, which could not be ascribed to the drug, was present. Teichmann's crystals were produced by salt and acetic acid, showing the presence of coloring-matter from the blood. Aniline and fuchsine tests were negative. Spectroscopic and chemical tests showed an abundance of bile coloring-matter. A minute quantity only of sugar was present. These experiments showed a profound alteration of the blood, which deranged the normal automatism of the medulla and depressed the functional activity of the spinal cord. The peripheral nerves were also affected, and aniline was doubtless separated in the organism. It is thus proven that the symptoms of aniline-poisoning and those of antifebrin (acetanilide) are identical, except in the fact that by the direct exhibition of large amounts of aniline a greater or less number of red corpuscles

are destroyed, while antifebrin produces much less alteration in the blood. Experiments have shown that an alkaline aniline solution of six-tenths per cent. destroys red blood-corpuscles in dilution of 1 to 7000 or 8000 blood, leaving only the stroma. An experiment upon an animal tetanized by strychnine showed the paralyzing power of aniline. Antifebrin produces no more marked convulsions, while aniline, in large doses, has this effect. Electrical examination of sensibility showed a less diminution after antifebrin than aniline, but the same effect produced by both. As an anodyne, the writer has used antifebrin in fifty-one cases, in thirty-nine of which satisfactory effects were produced; in twelve no result was obtained. In neuralgias of various nerves, central and peripheral, and produced by different causes, the results were excellent. Among the cases were four of facial, three of muscular, one of intercostal, and one of otalgic neuralgia. In severe pain produced by powerful irritation of sensitive nerves, as by cutaneous or subcutaneous inflammation (as ostitis, periostitis, operation wounds, caries, etc.), where the pain radiated in various directions, antifebrin was an excellent anodyne. In hemicrania and headache whose cause was intra-cranial, the drug was especially successful. This was seen in cases where bromides, caffeine, quinine, and antipyrin had failed of effect. In insomnia, general nervous irritation occurring after operations, or long-continued, severely painful illness, antifebrin was an excellent sedative; its effect was to lessen markedly the general irritability of the nervous system. This influence was generally manifested in twenty or thirty minutes after taking the drug, sometimes in an hour: the duration of the effect varied according to circumstances. Individual idiosyncrasy was often observed; in anæmic persons the effects were produced by small doses. In giving the drug it is best to begin with small doses,—with women from 5 to 6 grains, with men from 6 to 8 grains, and repeat these doses in an hour. In anæmic patients not more than thirty to thirty-eight grains in twenty-four hours should be given, and the administration should be discontinued at intervals. In healthy individuals the effect of the drug is very marked. Its continued administration results in an aniline cachexia, and after continued administration for four or six weeks of thirty to forty-five grains daily the decomposition and dissolution of the coloring-matter of the blood was markedly felt. Aniline and its salts have a powerful effect upon temperature. In seven cases of erysipelas, phlegmon, and septicæmia, with small doses, increasing to doses of 2 grains of aniline, a fall of temperature of from 2° to 3° C. was observed, and generally without cyanosis and other ill effects. As after antifebrin, the lowest temperature, pulse, and respiration rate was observed in three or four hours after administration, while the following rise of temperature, without chill, occurred in five or six hours. The doses which produced these effects in fever patients produced no effect on the temperature, pulse, or respiration of healthy persons. Sulphate of aniline and camphorated aniline also possess antipyretic power, and have also been used in doses of 3 and 4 grains in convulsions.

THE ACTION OF QUININE AND ALLIED SUBSTANCES ON CONTRACTILE TISSUE.

The following is a summary of an elaborate article with the above title, published by Dr. R. B. Wild in the *British Medical Journal* for September 3, 1887:

Quinine acts essentially in the same manner on all forms of contractile tissue. In small doses it stimulates, as shown in the heart, the increased height of contraction of voluntary muscle, and the initial contraction of the vessels.

In larger doses, or after longer action of small doses, it completely paralyzes the contractile power of the tissue; this is seen in the arrest of amœboid movement, the cessation of response to stimuli in voluntary muscle, the stopping of the heart in diastole, and the dilatation of the vessels.

In very large doses, or after very prolonged action, quinine causes contractile tissues to pass into a state of rigor mortis, as shown by the small spherical condition of leucocytes, the rigidity of voluntary muscle, the contracted state of the heart, the secondary contraction of the vessels after long exposure to the poison, and the contracted state of the œsophagus.

Voluntary muscle (that is, the tissue in which contractility is developed to its greatest extent) was most susceptible to the action of quinine, and was thrown into rigor mortis by solutions which produce paralysis only of the less specialized tissues; with strong solutions (for example, 1 to 1000) voluntary muscle passes into rigor mortis so rapidly that the period of paralysis is abolished, and the tissue, after a short period of increased contraction, passes directly into a rigid and contracted condition.

Dr. Wild has found cinchonine to act like

weaker solutions of quinine; cinchonidine had a similar but more powerful action on voluntary muscle than quinine; quinidine, on the other hand, acted as a direct depressant, the muscle dying with great rapidity.

THE EARLY SIGNS OF LOCOMOTOR ATAXY.

Dr. Max Karger has published as a graduation dissertation in the University of Berlin an account of a number of observations made on one hundred and seventeen cases of locomotor ataxy in Professor Mendel's clinic, with the view of detecting the early symptoms of this disease; for, as he says, the great hope of a really rational and satisfactory method of treatment lies in the recognition of the existence of the disease in its earliest stages. The history given by the patients established a connection between syphilis and locomotor ataxy in fifty-three per cent. of the cases. In the earlier stages he found symptoms affecting sensation, lancinating pains, numbness, especially of the lower extremities, cord-like sensation round the waist, retardation of the rate of conduction of sensations, and, what he looks upon as especially important, being almost always present, the so-called Romberg's symptom,—*i.e.*, the inability or great difficulty of balancing the body when the feet are placed parallel and close together, the eyes being shut,—which, however, he does not consider is due to the ataxy, but thinks it is an abnormal condition of sensation. With regard to ophthalmic symptoms, he finds that at the commencement of locomotor ataxy there is a diminution in the acuteness of vision and a concentric contraction of the field, amblyopia and amaurosis, which were due in thirty-five per cent. of the cases to atrophy of the optic nerve. Then there were slight and transitory paralyses of the eye-muscles. Insensibility of the pupil to light was found in sixty-six per cent. of the cases, and was due sometimes to a paralyzed condition of the sphincter and sometimes to disturbances of reflex action. With reference to the patellar reflex, the author thinks it has been considered to be absent rather too universally. He found it in eight of his one hundred and seventeen cases. The bladder reflex was often diminished, so that chronic vesical disease, the cause of which is not to be made out, ought to lead a medical man to think of tabes. Impotence was much more common than any increased sexual reflex. Very rarely gastric and cephalic "crises" and joint-affections were noted. The author suggests that complaints of a vague nature, such as nervous pains, eye- or bladder-troubles, should lead the physician to make a thorough examination with special reference to the want of patellar reflex, Romberg's symptom, and the want of reaction of the pupil, as these objective signs do not necessarily give rise to any subjective symptoms.—*Lancet*, August 20, 1887.

ANTIPYRIN IN LUMBAGO.

The Paris correspondent of the *British Medical Journal* for September 3, 1887, relates a remarkable case of cure of lumbago by subcutaneous injection of antipyrin, observed in a man, aged 42, a patient at the Hôtel Dieu. He could not sit down, and once in bed could not sit up. The lumbago was rheumatismal, for his fingers and toes were also swollen. After a first subcutaneous injection of 50 centigrammes (7½ grs.) of antipyrin, the lumbago completely disappeared. The injection of 50 centigrammes of antipyrin was continued every morning and evening, and at the same time 3 grammes (45 grs.) were administered by the stomach. The action upon the fingers and toes, although not immediate, was very rapid. The man is now perfectly cured.

THERAPEUTICAL VALUE OF THE MORE RECENT ADDITIONS TO THE GENITO-URINARY PHARMACOPŒIA.

Mr. E. Hurry Fenwick gives the following summary of the action of a number of new drugs in the treatment of genito-urinary diseases (*Lancet*, September 24, 1887).

Kola (Sterculia acuminata).—A powerful stimulant; contains 2.3 per cent. of caffeine, also theobromine. In the form of chocolate this drug promises to be of great value in tertiary syphilis, where large doses of potassium iodide have to be administered. The cases of syphilis in which the chocolate was first tried were often of the worst and most neglected type, being drawn from the neighborhood of the London Docks. Later work has proved its value in the well-fed. Patients were able to take doses of 30 grains to 60 grains of the iodide without inconvenience as long as the kola was administered with it. It is now prepared in the form of a paste,—"kolatina,"—like cocoa paste, as it is found more effective in the liquid form. From 1 drachm to 2 drachms makes a breakfastcupful; where this is inconvenient, the stick

kola-chocolate is eaten. Dose, 1 drachm to 2 drachms.

Salix niger (Black Willow).—A sexual sedative of decided value; useful in ovarian hyperæsthesia, also in prostatorrhœa, spermatorrhœa, excessive seminal emissions, and enforced continence. In the latter disorders its action is good, but inferior to potassium bromide. This is, however, somewhat counterbalanced by its non-depressant qualities. Dose, ½ drachm to 1 drachm. Finding it of value in those wearisome cases of urethral neuralgias following gonorrhœa, Mr. Fenwick began to substitute sodium salicylate for it, and was impressed by the relief the latter afforded. In cases of urethral pain in the adult, he first eliminates stone, stricture, urethral granulations, and over-acid urine, and then prescribes sodium salicylate (5 grains to 8 grains), with a gratifying result.

Lycopodium clavatum.—The tincture is of real value in frequent micturition, irritable bladder, and cystospasmus, where such is not dependent upon actual disease or foreign body. It has been found useful in spasmodic retention of children. Dose, 15 minims to 1 drachm. Note: White lycopodium is an inferior substitute, but still of some value. Dose, ½ drachm to 1 drachm, between bread and butter. Yellow lycopodium is useless.

Kava Kava (Piper methysticum).—This drug is of benefit in pyelitis, cystitis (acute or chronic), and urethritis. It is inferior to copaiba and sandal oil, but much more pleasant to take. It is of value when the oils are not tolerated. The inflammation seems to be increased at first. Fluid extract, ½ drachm to 1 drachm on a full stomach.

Stigmata maidis (Corn Silk).—Difficult to obtain at certain seasons, but of great value in pyelitis and renal colic. One case is especially worthy of notice. A patient who had suffered from renal colic and pyelitis for seventeen years was admitted into the hospital for exploration of the kidney. The patient was so relieved with corn silk that he refused operative interference. It is also of value in chronic or subacute cystitis, but in the writer's hands it has failed in acute cystitis. Note: The fresh infusion is the best; dose, a wineglassful. Failing this, use the extract; dose, ½ drachm to 1 drachm.

Papaw, Papyotin, Papaine (Carica papaya).—Of marked benefit in syphilitic ulcers of the tongue and throat, especially when mixed with cocaine. The surface of the ulcers and the white patches (secondary syphilis) rapidly clean and begin to skin over. Lozenges have been made which are most useful (papaine, ⅛ gr.; cocaine, ⅛ gr.; potass. bicarb., ¼ gr.). In a girl of 7, with severe syphilis of the mouth (after direct inoculation), the ulceration had resisted all applications for eight or nine months, and the child had wasted considerably. A few of these lozenges produced a marked effect, the ulcers healed, and the child rapidly fattened. Mix papaine with a small quantity of glycerin and water, so as to form a thin paste, add a little bicarbonate of potassium, and brush ulcers with the same thrice daily. Whatever its position may be as a digestive ferment, papaine is worthy of trial as a preventive and reducer (?) of renal calculi. Dose for renal stone, 1 grain to 3 grains, or more, in pill or powder; to be taken with meals.

Pichè (Fabiana imbricata).—Of undoubted value in lithiasis and renal stone. One patient obtained so much relief from the hæmaturia and pain that he obtained the plant direct from Peru every mail, and made the infusion himself. In Mr. Fenwick's hands it has failed in chronic cystitis. Dose, fluid extract, ½ drachm to 1 drachm; infusion, a wineglassful.

Cocaine.—The fresh work with this drug is to be brought before the Medical Society. Routine work: Lithotrity in the feeble was performed with a four per cent. solution; small stones in the adult with a twenty per cent. solution. Internal urethrotomy needs a solution of twenty per cent., and any vesico-urethral instrumentation one of from four to twenty per cent.

Naphthaline ($C_{10}H_8$).—A derivative of benzol and allied to phenol. Given with benefit in fetid urine. The micrococci speedily disappear, and the urine becomes sweet. The large doses recommended (15 grains) are unnecessary, and produce vomiting and abdominal pain. Dose, 3 grains, cautiously increased. Note: Urine of patients taking naphthaline smells of phenol, and may remain exposed for some days without change.

Pine or Spruce Extract (Abies excelsa).—Has a slight diuretic action, and relieves renal pain unconnected with calculus. It is of use also in a bath, and as a liniment in gonorrhœal rheumatism. It is a pleasant vehicle for drugs in pyelitis and cystitis. Has proved of benefit in gleet. Dose, 1 drachm in water.

Ulexine (Ulex Europæus).—"A more powerful diuretic than sparteine or preparations of *Sarothamnus scoparius*" (Gerrard). This is to be employed with caution in stricture. One patient with stricture of old standing, after taking a pill containing $\frac{1}{10}$ grain, had

temporary suppression of urine, vomiting, and fever.

Strophanthus (Kombè).—Mr. Fenwick believes there is a distinct future before caffeine, digitaline, and strophanthus as adjuvants to operations upon the vesico-urethral tract. We have sometimes to deal with partial or complete temporary suppression, and sometimes with rigors after operative interference or even instrumentation. Caffeine seems indicated to avert the former; strophanthus the latter. Again, if we have reason to anticipate sudden flooding of the renal vessels, and consequent urinary fever as the result of an operation, then digitaline, from its power of controlling the renal circulation, is indicated. Our treatment, however, on these lines must go *pari passu* with our oncometric knowledge of drugs which affect the kidney circulation or the abdominal blood-pressure. The author believes strophanthus has power, worthy of further investigation, in controlling rigors. He employed it on the theoretical grounds that it increases cardiac power and general blood-pressure. Five inpatients, suffering from violent rigors after instrumentation, were treated with the tincture in doses of 5 minims after catheterization. In no instance were rigors induced.

Chaulmoogra Oil (Oleum gynocardiæ).—Of value as a liniment in gonorrhœal rheumatism, osteocopic pain of syphilis. Its power is increased if it is mixed with lanoline. It has great influence upon some forms of adenitis, also in secondary syphilis. Dose, 5 minims to 10 minims, on a full stomach.

Hydrastis Canadensis (Golden Seal).—Of some use as an astringent vesico-urethral injection, checking mucous discharge; worthy of trial in some forms of prostatic engorgement and enlargement. Dose, 10 minims.

Damiana (Turnera aphrodisiaca).—Good in some cases of diminished sexual power, where such does not depend upon organic disease. Often of use in melancholia and depression, if of genito-urinary origin.

Caroba (Jacaranda tomentosa).—Of some value in secondary and tertiary stages of syphilis. Dose, 1 drachm.

ANEMONIN.

Anemonin, the active principle of *Anemone pulsatilla*, is stated by M. P. VIGIER (*Journ. de Pharm.*, p. 99) not to possess the active properties of the fresh plant, which he believes are due to an essential oil, since the distilled water made from the fresh plant is extremely acrid, causing symptoms of severe coryza, but in a short time becomes turbid, loses its acridity, and deposits anemonin. The anemonin, $C_{15}H_{12}O_6$, therefore, he believes to be formed by the oxidation of the essential oil. Anemonic acid, which contains one equivalent more of oxygen, is formed when anemonin is dissolved in an alkaline solution. It may be remarked that M. Vigier does not appear to be acquainted with the paper on this subject by Dr. Beckurts (*Pharm. Journ.*, 3, xvi. 365), in which the acridity of a freshly-prepared distillate is attributed to "anemone camphor," an unstable compound, which, in contact with water, undergoes decomposition into anemonin and anemonic acid. M. Vigier attributes the ready absorption of anemonin by the stomach to the fact that it is really soluble without alteration in hydrochloric acid (although it is rapidly destroyed by nitric and sulphuric acids). He does not think it is so poisonous as is generally supposed, having himself frequently taken 10 centigrammes without any poisonous effects. Yet, in doses of 2 to 4 centigrammes per day, its anti-catarrhal effects and its action on the nervous system are manifested. In consequence of the high price of anemonin he recommends the tincture of the fresh root to be used, made of equal weights of the fresh root and alcohol of ninety per cent., the dose being 2 to 4 grammes per day. If a tincture of the leaves be preferred, it is made of the same strength, but the leaves being less active than the root, the dose is given from 5 to 10 grammes daily. —*The Pharmaceutical Journal and Transactions*, August 27, 1887.

SCLEROSIS OF THE HEART.

According to HUCHARD the causes of sclerosis of the arteries of the heart may be divided into three groups: the first being due to intoxications, or rather toxæmia, by alcohol, tobacco, malaria, and lead; the second group is formed of causes such as the diathetic states of arthritism, gout, and syphilis; while the last group, and one to which exception may with at least some reason be taken, is composed of causes such as physical, moral, and intellectual over-pressure. The sclerosed heart may be either hypertrophied or dilated, but most often dilatation and hypertrophy are associated. Modifications of the form and size of the heart are the direct consequences of the initial vascular lesion and not of the ensuing sclerosis. The common lesion is obliterating arteritis of the

small coronary vessels, and it takes place slowly, so as to allow of time for compensating hypertrophy and for sclerotic lesions to develop. If the arteritis is of more rapid progress, dilatation of the heart and alterations of the heart-muscle fibres are the preponderant changes. Three histological varieties of cardiac sclerosis may be differentiated, following Weber: (1) peri-vascular sclerosis due to the propagation of inflammation; (2) the dystrophic sclerosis from regional ischæmia; and (3) mixed sclerosis. The changes in the muscle fibres are but imperfectly known. Two of the principal alterations are simple atrophy and the vitreous degeneration of Zenker. Nosographically, cardiac sclerosis is one of the anatomical expressions of arterio-sclerosis of the heart. Weber regards arterio-sclerosis as the outcome of certain etiological conditions, among which must be ranged heredity, certain hygienic habits, and various chronic intoxications.—*Lancet*, September 24, 1887.

ANDROMEDOTOXIN.

The investigation of Professor Plugge, to which reference has been made on more than one occasion, has shown that andromedotoxin is not only the toxic principle of the Andromedas, but probably also of all the poisonous ericaceous plants. This compound has now been prepared in considerable quantity from the *Rhododendron ponticum* by HERR DE ZAAYER, who has further investigated its properties (*Chem. Zeit.*, July 31, p. 183). He reports that pure andromedotoxin occurs in white, delicate, crystalline needles, melting at 228° to 229° C., with signs of incipient decomposition, but bearing a temperature of 100° C. for a long time without alteration. The compound is soluble in alcohol, amylic alcohol, chloroform, ether, and benzol, and three times more soluble in cold than in boiling water. It shows the peculiarity that its solutions in water, alcohol, and amylic alcohol are lævogyre, whilst a chloroformic solution is dextrogyre. Andromedotoxin belongs to the class of indifferent bodies; its solutions in different liquids have an alkaline reaction, but it is not precipitated by any of the alkaloidal reagents, nor by the solutions of metallic salts, neither does it reduce Fehling's solution. Strong sulphuric acid gradually dissolves it with a brown color, but if heated on a water-bath with dilute sulphuric acid it assumes a beautiful rose color. Dilute hydrochloric and dilute phosphoric acid affect it similarly, the color being more violet-red with the former, and mulberry-red with the latter; the reaction taking place in each case with a very minute quantity. The composition of the pure substance is most simply expressed by the formula $C_{51}H_{81}O_{19}$.—*The Pharmaceutical Journal and Transactions*, August 27, 1887.

THIRIAR ON WOUNDS OF THE PALMAR ARCHES.

DR. THIRIAR, taking as his text the case of a man who had been unsuccessfully treated both by a pharmacist and a surgeon for a wound in the hand, which, when he was brought into hospital, was both bleeding and suppurating, gave recently an instructive clinical lecture to the Brussels students on the management of wounds of the palmar arches. He pointed out that there is, from a clinical point of view, a distinction to be drawn between these and other wounds of the palm which implicate only the collateral branches, a distinction which is not clearly stated in surgical works which students read. The latter class of wounds present no difficulty, and the hemorrhage from them can be easily arrested. Not so, however, with the wounds of the palmar arches. Here, of course, the obvious indication is to search for the two ends and tie them. In consequence, however, of the tendency of the artery to retract, it is frequently impossible to find these ends without an amount of dissection which is undesirable. Perchloride of iron and other styptics hardly ever succeed, and they are to be avoided on account of the effect they produce on the surrounding tissues. The actual cautery is somewhat better, if not too highly heated, but even this very frequently fails. Even if success results, it is usually only temporary, for the muscular coat of the artery is apt, as Dolbeau pointed out, to relax after a time, and permit hemorrhage to break out afresh, in spite of any clots which may have formed. Similarly direct compression is seldom permanently successful. Compression of the ulnar and radial, forced flexion, and forced extension may be used as temporary expedients, for example, on the field of battle. Vanzetti's method of keeping the lips of the wound widely apart by means of hooks and that of forcipressure is not satisfactory, and Dr. Thiriar recommends that no time should be lost in trying cones of charpie and starch, elastic balls or sponges. The safest and best plan is to ligature in the wound if possible;

if not, above it. In recent cases it can usually be done in the wound. Where it is necessary to tie higher up, it is of no use to tie the ulnar and radial; and if the wound is not very recent, and there has been time for a considerable amount of collateral circulation to have developed, even the brachial must be tied above the profunda. It is necessary to remember that the axillary artery sometimes gives off two brachial branches as high as the axilla itself. M. Thiriar examined a large number of arms in the dead-house when he was in charge of the post-mortems, and found this anomaly present in twelve per cent. of the cases. However, he has always succeeded in arresting hemorrhage in wounds of the palmar arches, even when the tissues were suppurating, by a modification of Sir J. Simpson's plan of acupressure. He uses needles curved to a semicircle, and, passing them under the artery, brings the edges of the wound together and occludes the vessel by the application of a twisted suture, which there is no need to draw very tightly. He summarizes his advice thus: 1. Direct ligature. If impossible,—2. Twisted suture and acupressure. If unsuccessful,—3. Ligature of humeral in the middle, if the collateral circulation has not had time to develop; above the profunda if it has. 4. Employment of compression, direct or indirect, forced flexion, forcipressure, styptics, etc., only as temporary expedients.—*Lancet*, October 1, 1887.

AMMONIUM BORATE AND ZINC CYANIDE.

The latest remedy in vogue for the treatment of phthisis appears to be borate of ammonium, which has been found by PROFESSOR LASHKEVICH of great value, producing a marked effect on the expectoration, and in some cases diminishing pyrexia in the early stages of disease. The dose given was 5 grains three times a day, combined with codeine, henbane, or other sedatives.

The same authority has found in cyanide of zinc a remedy which exerts a beneficial effect on some cardiac cases, such as cannot be obtained by other means, particularly in cardiac neuroses, in which it acts quickly and certainly. Palpitation, want of rhythm, and pain in the region of the heart are quickly relieved and sometimes cured. The dose given varies from $\frac{1}{16}$ to $\frac{1}{8}$ of a grain three times a day.—*The Pharmaceutical Journal and Transactions*, August 27, 1887.

ETHER INHALATION IN TETANUS NEONATORUM.

DR. DEGHILAGE, of Mons, in Belgium, having a case of trismus neonatorum, and having repeatedly given chloral and ether per rectum without producing any effect, the child rapidly becoming worse and seeming in imminent danger of death by asphyxia, determined to administer ether by inhalation. In addition to this, artificial respiration was employed from time to time by means of a tube inserted into the nostrils. Some pieces of Rigollot's mustard-leaves were also applied to the chest. The child was laid on its side, according to a suggestion made by Marion Sims. The result of this treatment was that in a few hours the little patient's condition had improved to a very marked degree. The next day profuse perspiration occurred and the spasms entirely ceased. Shortly after this the child was convalescent.—*Lancet*, September 24, 1887.

TREATMENT OF GALL-STONES.

DR. SAMUEL MORALES PEREIRA, of Puebla, Mexico, gives an account in a Mexican medical journal of a case of "biliary calculus diathesis," with enlargement of the gall-bladder, in which he found a decoction of a well-known fern, *Asplenium ceterach* (or *doradilla*, as it is called in Spanish), of great value. The patient was a gentleman of good general constitution, who had suffered for a long time from pain of a more or less periodical character in the hepatic region. His digestion and his temper were considerably affected. He had applied to a number of medical men, but had never derived any benefit from their treatment. On examination the right hypochondrium was found to measure six centimetres more than the left, the region of the gall-bladder being distinctly enlarged and tender to the touch. The hepatic dulness in the axillary line was of normal breadth, but it extended five or six centimetres beyond the normal in a downward direction in the mammary line. On changing the patient's position, no alteration in the situation of this abnormal dulness could be detected. The patient, on being asked, said that his urine deposited a red sediment, and that he had at times passed calculi with his stools. Dr. Pereira, having had experience of the good effects of ceterach in gravel and urinary calculus, and believing that it exerts an influence

in "calculous diathesis," decided to employ it in this case. A decoction of half a drachm of the plant in five ounces of water was ordered four times a day. During the first twenty days no effect was observed. By the end of another twenty days the symptoms of mental irritability had disappeared, and the pain in the hepatic region had very greatly diminished. In fifteen days more the tumor in the region of the gall-bladder had become much less perceptible. The patient had been kept on milk and broth, which he did not at all like. He had passed three gall-stones and some gravelly matter with his stools, there having been some severe hepatic pain.

After this the patient continued to improve, though it was not easy to convince him that he was doing so. The amount of ceterach was diminished, and capsules of taurin prescribed, belladonna frictions being also applied to the hepatic region. He passed a succession of gall-stones, and the whole of the abnormal physical signs as well as the subjective symptoms passed away. Dr. Pereira hazards a suggestion that ceterach may have some effect on calculi already formed, as well as on the "calculous diathesis." He remembers being struck with the appearance of a stone—he does not say of what kind—which he saw removed from a young man's bladder, and which, though hard in some parts, was so friable in others that it could be broken down with the fingers. On questioning the patient, it was found that he had for some time taken ceterach by the advice of an old native medicine-man, and that while he was doing so he had remarked that he passed more urine, and that it contained gravel. The pain, however, did not diminish, and so he lost faith in the treatment and gave it up. It is to be remarked that the use of ceterach in urinary calculi is by no means new. Dr. Pereira does not explain what relationship he supposes to exist between the "calculous diathesis" which leads to urinary calculi and that which produces gall-stones, or why a remedy which is useful in one case should be prescribed in the other; still his facts, such as they are, are worth noting, and they seem to have interested the members of the Mexican Academy of Medicine, before whom they were brought, and who had the opportunity of examining the various gall-stones and gravelly matter passed with the fæces, as well as the partly friable vesical calculus upon which Dr. Pereira's suggestions were in part based.—*Lancet*, October 1, 1887.

COLD AFFUSION IN APPARENT DEATH FROM LIGHTNING.

Dr. Hidalgo, of Mexico, brought before the Academy of Medicine of that city, at a recent meeting, the case of a man who was struck by lightning, and was at first thought to be dead, but who, after having had, at the suggestion of a passer-by, a large quantity of cold water thrown over him, began to show signs of vitality. He did not at first receive any medical treatment, so that the early history of the case had to be obtained from the relatives. After being brought home, water was still poured over him until he spoke for the first time, saying he was cold, and begging that this treatment might be stopped. He was then put to bed. During the night he did not sleep, but kept talking in a delirious manner, and complaining of pain, especially in the head. When asked what was the matter, he said at one time that he had something the matter with his chest, and at another that he had rheumatism all over, but he made no reference to the lightning. Dr. Hidalgo saw him the next day and found him in a semi-comatose state. The pulse was 75, full and compressible, the temperature normal, the respiration rather rapid. He was so deaf that he could only be made to open his eyes by shouting close to his ear. The pupils were contracted. He complained of pain all over, but especially in the head and arms. He had passed three badly-smelling liquid stools during the night. He was neither hungry nor thirsty. The electric spark had entered the upper part of the right parietal region just behind the auricle. The scalp was burned over a surface of about four by five centimetres, and a spot of dried blood was seen on the upper part of the auricle. The right side of the neck was reddened as by a burn of the first degree; below this, as far as the umbilicus, the effects were equal to those of a burn of the second degree, of the width of about fifteen centimetres at most, but very irregular in its dimensions. The electric fluid had passed down the inner aspect of the right leg, producing a burn of the second degree. It had then passed down to the foot, where the burn was of the first degree, and the strip of skin affected much narrower than above. The hat, coat, and trousers were injured—as if torn—all along the course of the current, but they were not burnt in any part. The patient was treated with sedatives and some clysters, and in sixteen days was perfectly well. Dr. Hidalgo supposes that the pneumogastric was affected by the shock, which paralyzed the respiration, and subse-

quently the heart's action, similarly to the behavior of an overdose of chloroform. The indication, therefore, was to re-establish the respiration, and this was admirably fulfilled by the cold affusion, which fortunately was administered quickly, before the paralysis of the heart had become absolute.—*Lancet*, October 1, 1887.

THE USE OF SALICYLIC ACID IN THE TREATMENT OF SCURVY.

Mr. Alexander Faulkner calls attention, in the *Indian Medical Gazette* for July, 1887, to the efficacy of salicylic acid in the treatment of scurvy, stating that the advantages which resulted from its administration have been so marked as to warrant the hope that others would give this drug a fair trial. In no case in which he employed it were any untoward consequences noted, though the cases in which it was used were free from any renal or hepatic complications,—conditions which, if present, are supposed to be indications for the non-administration of the drug. As the elimination is not rapid, and congestion of the kidney or liver certainly in a great measure retards its excretion, it is evident that caution must be observed in prescribing this drug, and it should not be given in any case suffering from renal or hepatic complications. As a preliminary precaution Mr. Faulkner recommends the analysis of the urine and the avoidance of the use of this drug in the aged or the very young. He reports a case of scurvy in which this treatment was used with success.

CARBOLIZED OIL IN SCARLET FEVER.

In a paper by Mr. John Brown, medical officer of health of the borough of Bacup, testimony is borne as to the prophylactic advantages attending the early and continued inunction of carbolized oil in cases of scarlet fever. The carbolized oil used contains five per cent. of the pure carbolic acid, and, as soon as the rash is out, this is applied over the whole body except the face, for which olive oil is used. The inunction is repeated twice a day, with a warm bath every night, and the treatment is continued until the sixth week, by which time it may be expected that the desquamation of the skin is complete, and the patient therefore no longer capable of conveying the infection.—*The Pharmaceutical Journal and Transactions*, August 27, 1887.

Reviews.

Spinal Irritation (Posterior Spinal Anæmia). By William A. Hammond, M.D. Detroit, Mich.: Geo. S. Davis, 1886.

Every practitioner in American cities must have seen large numbers of instances of that group of medical cases which form the subject of the little brochure before us. The acknowledgment of the existence of this class of cases does not, however, of necessity involve the recognition of spinal irritation so called as a distinct disease; and the assertion of Dr. Hammond on page 19 must be set down to ill nature or lack of tolerance rather than to inherent truthfulness. Such persons must necessarily belong to one or the other of the following categories: their experience must have been very limited, and therefore they cannot see, or they must have been endowed either with restricted powers of observation or with minds so constituted as to cause them wilfully to close their eyes to the facts that they did not care to see. The question is, whether this so-called disease is not simply a form of hysterical disorder, belonging to the hyperæsthesia and anæsthesia so common in hysterical persons. The symptoms certainly occur, especially in neurotic, hysterical women, and often develop and disappear with a suddenness so characteristic of hysterical accidents. The writer once had an opportunity to watch a case of so-called spinal irritation of the most severe type. The hyperæsthesia was so excessive that the mere touch of a camel's-hair brush upon the back would cause the patient to fall, and he has frequently seen the unfortunate woman lie in an almost syncopal condition for days as the result of some one having brushed against her in passing; and yet this same case, after being fifteen or twenty years confined to the room, recovered in a few days under the influence of the so-called faith-cure. The well-known views in regard to the pathology of the disorder, viz., that it is the anæmia of the posterior columns of the spinal cord, are reiterated in this little book, and supported with all the ingenuity that the author is capable of. The frame of mind in which he approaches the subject is well set forth in the following sentence, which we take from page 53: "It is better to do this, even if the view we enunciate is not absolutely sufficient to account for all the observed phenomena, than to shut up our opinions in our own minds, or, worse still, form none whatever." It is exactly this frame of mind which,

to our thinking, is one of the great drawbacks to modern medicine. When there are no sufficient grounds for forming a theory, it is much better for the mind to rest, and to acknowledge the truth of the facts of the case, and its inability to account for them, rather than to commit itself to some baseless and implausible theory. Careful consideration of the reasons assigned by Dr. Hammond for his belief that this spinal irritation is due to spinal anæmia does not bring to our mind any conviction whatever of the truth of the theory. Most of these reasons are exceedingly trivial. Some of them, indeed, tell very strongly against his belief. He states very decisively that a large blister applied over the tender part of the spine affords prompt and complete relief. Whatever knowledge we have of the action in blisters, all tends to show they are useful, not in increasing the flow of blood in the distant affected organ, but in withdrawing the excess of blood. The treatment of spinal irritation, as given by Dr. Hammond, is exactly that of a hysterical state, excepting in regards to counter-irritation, and in the great majority of cases such severe measures seem unnecessary and barbarous. The effect of what we may call the credulous mental condition of physicians is nicely illustrated by a statement made by Dr. Hammond that an application of water as hot as can be borne, as a general thing, increases the flow of blood to the spinal vessels. This bold, absolute assertion rests really upon not a single grain of evidence. Hot applications bring relief in some cases of spinal irritation, spinal irritation being due to anæmia. Therefore hot applications increase the flow of blood in the spinal vessels, therefore spinal irritation is due to anæmia. This reasoning in a circle is an epitome of the whole of the book.

MASSAGE AS A MODE OF TREATMENT. By William Murrell, M.D., F.R.C.P.
Philadelphia: P. Blakiston, Son & Co., 1012 Walnut Street, 1887.

This is a well-written plea for massage as a means of treating various diseases. We fear that its influence for good will be marred by the tendency that is shown to overstate the value of the method of treatment. There can be no doubt that massage is a most important remedy in the hands of one who knows how to use it; but, after considerable experience, we are convinced that it will not do all that is claimed for it by Dr. Murrell. Speaking of poliomyelitis he says, "By systematic massage an improvement is speedily effected," and he continues in such a strain as would lead the unwary reader to the conclusion that almost all cases of poliomyelitis are curable by this means. Assuredly this is not correct. All that massage can do in such cases is to maintain the integrity of the muscles, as far as may be, and, if the cells in the spinal cord have a tendency to recuperate themselves, aid in the final return to health. There is no reason to believe that the massage has any direct influence upon the diseased spinal cells, and in the vast majority of cases its most persistent use must end in failure. Then, again, we are told not only that massage is useful in Landys (*sic*) paralysis, but such language is employed as to lead to the direct inference that if massage be employed recovery will take place; for it is said the paralysis in *untreated* cases usually progresses upwards until it involves the medulla oblongata, and death ensues. In true Landry's paralysis massage is probably about as powerless as are other remedies. Then, again, massage is recommended in acute chloral poisoning by Dr. Murrell as a means of maintaining the temperature of the body; for such purposes, in comparison with the hot baths, the method is absurdly feeble. We would recommend, if the experience of our author is to be confirmed, middle-aged ladies to the use of massage. In fact, we may expect the rooms of the *masseuse* to be crowded with middle-aged spinsters hopeful of marriage. Great must have been the glee of Dr. Murrell when he reduced the waist of a lady whose age was reputed to be thirty-five "from twenty-five to twenty inches," and made for her an excellent marriage.

A serious error into which Dr. Murrell has fallen is a misunderstanding of what he terms the Weir Mitchell treatment of neurasthenia, —*i.e.*, the so-called rest-cure. He affirms that in it the massage employed is no massage but simply rubbing. There is no truth in this. The rest-cure, as practised in Philadelphia, dates back to the times of Professor Jackson. The immense improvements introduced into the method by Dr. S. Weir Mitchell consist largely in the use of massage, and the massage as practised upon his patient is a true massage, conforming in all respects with the rules which Dr. Murrell first derived from the older German and French writers. We must also disagree with Dr. Murrell in regard to anointing the skin before the use of massage. The reasons he assigns for performing dry rubbing are as follows: 1. You get

better contraction of the muscles, and consequently a greater flow of lymph; 2. Electrical currents are more readily developed in the tissues; 3. There is a greater elevation of temperature in the part; 4. You do not make your patient in a mess. In answer to this—we rarely, if ever, see distinct contractions of the muscles produced by massage; there is no proof of the assertion that electrical currents are more readily developed in the tissues, or that there is greater elevation of temperature in the part, if the tissues and part are understood to represent those which lie beneath the skin; and, if the anointing be properly done, the patient is not left in a mess. The objection to dry massage is that the massage is apt to become a rubbing, and irritation of the skin to be produced rather than an effect upon the deeper-seated tissues. A little sweet cocoanut oil or vaseline placed upon the skin before rubbing is very often of advantage, especially when there is a tendency to irritability of the skin. In conclusion, we may say that the forms of massage as described by Dr. Murrell are those which are employed by all well-trained operators and recommended in the standard works on the subject.

Correspondence.

LONDON.

(From our Special Correspondent.)

We are now in the depths of the dull season here. Everybody is out of town, excepting your faithful correspondent. No hospitals, no societies. Physicians, surgeons, professors, have silently disappeared to the coast, to the mountain, to the continent, some of them to the Congress. If you ask me how can they be spared, these guardians of the public health, I must tell you that their clients have disappeared too. Everybody that can afford a change takes it at this season, and many who can't pay for a change have it provided for them. The annual holiday appears to be a necessity in these days of restlessness and haste; whether a necessity or no, it is a settled institution. It is not pleasantly received by some of our seniors in medicine, who remain true to the traditions of their youth, and rail at the idleness, as they call it, of these degenerate days. These ancient philosophers class the annual holiday with the penny post and the daily paper among the curses of modern civilization, and we are as likely to give up the one as the others.

But, as you know, some of us combine work with pleasure, and spend part of our precious change at the great scientific gatherings of the year. This time twelve months ago I gave you an account of the meeting of the British Medical Association at Brighton. I have now to chronicle some events and to discuss a few questions in connection with this year's meeting in Dublin, which are of prime interest to us as therapeutists.

The president of the Section of Pharmacology and Therapeutics on the present occasion was Dr. Whitla, of Belfast. Dr. Whitla is one of the most advanced and generally distinguished pharmacologists in Ireland. He is a man of learning and enthusiasm, and possesses especially the precious gift of indomitable energy. He is just the man who might be expected to attack and to solve the practical problem of purifying and popularizing his special subject with the profession. Others might lament the lack of fervor in treatment with us, as I have myself done more than once in these pages. Dr. Whitla is not content with wringing his hands: he raises his voice, and gives forth words of encouragement and counsel. He proposes a remedy for the backwardness of therapeutics. He formulates a definite plan for at once extending a proper interest in the action and uses of drugs, and increasing steadily and rapidly, as he hopes, our knowledge of these. The amount of opportunity and experience wasted now in this direction is deplorable; as Dr. Whitla says, "The indication at present is not for more new remedies, but for a better and more precise knowledge of those already placed in our hands. It seems as if one of our very greatest barriers to progress is to be found in the ever-increasing number of new drugs, which pour in upon us at a rate which prevents that thorough testing of their qualities and actions so necessary before the range of the new weapons can be accurately determined. A vast field of almost virgin soil lies at our feet: pathology, chemistry, physiology, pharmacology, and pharmacy have brought in their discoveries and enriched the domain of therapeutics, and if we are to reap the benefits we must be up and doing." All this is very true, and it is well put. About the need for reform, about the crude material from which the perfect instrument of cure is to be produced, about the direction whence good must be looked for, if it come at all, there can be little doubt or division of opinion.

But when we proceed to the *method* of reform we are in difficulty. Here a conflict of opinion will begin. In discussing the cure of modern therapeutics, we find that the better treatment of treatment is as obscure and difficult as the better treatment of disease! Dr. Whitla would have the British Medical Association come to the rescue of therapeutics in this country. He reminds us, most fittingly, that we have in this great society a powerful machine, ready to be set in motion. He would have the Association take up two great pieces of work,—first, "the encouragement of a better method of stimulating therapeutic research" among its members; and, second, the making its voice heard in improving and perfecting our national pharmacopœia. These ends and aims are obviously so desirable, and apply so unquestionably to your country as well as ours, that you will be interested to learn the details of Dr. Whitla's scheme.

First, then, for "the stimulation of therapeutic research" with us. He would have "a portion of the space of the *British Medical Journal* wholly set apart and dedicated to the ventilation of questions relating to the treatment of disease by members of the Association. A small committee, with a good secretary, would be an essential part of the scheme;" for "to permit the remedies or methods of treatment to be selected by the contributors at random would be to remain precisely where we are. The committee would select one or more remedies whose actions in disease are but imperfectly known, and would invite a full and free discussion and investigation of their virtues through the *Journal* upon certain definite lines previously laid down. In a short time from numbers of workers an amount of valuable experience would be readily obtained which otherwise could not be procured during many years of patient individual toil. Thus there would be yielded an abundant harvest of carefully observed and recorded facts, clearing up many doubtful or exposing many unsuspected actions of certain selected drugs in certain selected diseases. These results, with proper sifting and supervision, might soon become the most valuable additions made to the science of medicine in our time. Many men would probably be induced to devote themselves to the close observation of a limited number of remedies when these would be selected for them, and many other men would be induced to give to the world results already obtained during years of practice, which otherwise they never would have thought of publishing."

Now this proposal of our president sounded all very well at the first hearing, but it bristles with practical difficulties when regarded dispassionately. To my mind the chief obstacle to its successful accomplishment is that it will meet with something more than indifference from all but the few of us who are specially interested in drug treatment and have a voice in the councils of the Association. If medicinal treatment is to be favored with a special portion of the space of the *Journal*, wholly set apart to it, what about surgical treatment? And what about gynæcology, that grossly prolific section of medical literature? Have not these departments as good a claim as therapeutics to a column in the *Journal*, with their special committees, each of them, and their secretary, and their selected subjects calling for ventilation? And if treatment be thus favored, why not pathology and public health? It is desirable to sift and to test not only treatment of every kind, but all portions of the science and art of medicine. The editorial in the *Journal* on Dr. Whitla's address gave but a half-hearted reception to his proposal, and no wonder. His proposal practically amounts to the disintegration of the management of the *Journal*, and the distribution of the fragments under the supervision of a number of co-editor specialists. If this practical difficulty arise (and I confess I cannot see a way out of it), Dr. Whitla's scheme will be crushed in its inception. I believe we have yet to persuade many of our men of greatest influence in the profession of the paramount importance of medicinal therapeutics. Until this desirable end has been attained, I fear it is idle to look for special favor for our subject in the columns of the medical press. But there is no reason why something like the first portion of Dr. Whitla's proposal should not be carried out. We might have an organizing and marshalling of our therapeutical forces, and go forth on a kind of system to attack the opposing host of ignorance, indifference, despair, and superstition with respect to the value of drugs. This might or might not be done by or through the British Medical Association; but the promoters of the movement had better work quietly, and not claim a weekly presentment of their position and results in the columns of a journal.

If I have ventured to criticise the first of Dr. Whitla's proposals somewhat freely, I fear I must be even less tender towards his second, —that the British Medical Association should busy itself with improving and perfecting our

national pharmacopœia. Dr. Whitla would have us arrange a *plebiscite* of the medical profession on the subject of the common drugs of the British Pharmacopœia in daily use; and he would further appoint another "small committee, with a good energetic secretary, to select new drugs (not in the British Pharmacopœia) likely to have claims to official recognition, and then to invite, aid, and encourage investigation, and report on their actions and values." . . . "No drug would ever be allowed to find its way into the official list until after the most rigorous and exacting scrutiny of its properties by a large number of independent observers."

The first thought that occurred to one on hearing this suggestion was, Why so much fuss and anxiety about a national pharmacopœia? What is a national pharmacopœia to us, or to the science of therapeutics, that we should trouble ourselves about it? How many of us, having found a valuable drug, care, or even ask ourselves, whether it is "official" or not? Is strophanthus "official"? If cocaine had happened to be introduced to the profession a few months after the publication of the new British Pharmacopœia, instead of (as it happened) a few months before its publication, would it be less valuable, less extensively used at this moment? Of course not. We do not question the many advantages, the necessity, of an official guide; but the advantages do not lie in the direction of perpetually "sifting" our remedies into "official" and "non-official." A good drug establishes itself without the help of a pharmacopœia; a useless drug is dropped and forgotten, even though it be bolstered up by official sanction. The London Pharmacopœia deliberately dropped out bromide of potassium in the 1851 edition as being a useless drug; but I am not aware that this bit of sifting interfered with the rapid adoption of the bromides when their influence in epilepsy had been determined. As for a *plebiscite* on the purgation of the Pharmacopœia, surely nothing could be more useless or more likely to end in general discord and discontent. After all, an intelligent pharmaceutical chemist could tell us more in a few minutes as to the value of any given drug in the eyes of the profession than the most elaborate *plebiscite*. He would be able to say what is "asked for" and what lies as wasteful stock on his hands. Useless drugs, like useless men and useless things in general, die a natural death, and may be safely left to their fate.

The matter is perfectly different as regards the pharmaceutical part of the Pharmacopœia. A pharmacopœia is a pharmacopœia, which, being interpreted, means a treatise on *how to make* medicines. I have already told you in my letter for April, 1887, that the Pharmacopœia Committee of the General Medical Council have a permanent adviser and reporter at work for them, in the person of Professor Attfield, one of the most distinguished and active pharmacological chemists of the day. It is absolutely essential that there should be such an office, filled by such a man, to follow the rapid advance of this department of science, to scrutinize with the greatest closeness, and to put to practical test the many improvements that are published in pharmaceutical methods. Professor Attfield is perfectly able, as I have already suggested, to ascertain the opinion of the medical profession on the therapeutic value of drugs, old and new, and to recommend to the committee for their consideration and decision which substances might be added to the Pharmacopœia and which removed from it. Nothing could be more sensible, and nothing more in touch with the minds of thoughtful men at this moment, than the remarks on a closely allied subject of Professor Leech, of the Victoria University, at the annual meeting of the British Pharmaceutical Congress in Manchester last week. Professor Leech urged his pharmacist audience to keep science ever before their eyes. The prosperity, the evidence, of their profession would depend on their appreciation of the value of scientific methods. We have entered on a new era in the preparation of medicines, and this advance originates essentially in a more correct knowledge of the composition of drugs and the properties of their active principles. To these wise remarks of Professor Leech I would like to add, let us give our counsel a practical shape. If therapeutics, pure and simple, owes a large part of its recent advance to pharmacological research and pharmaceutical improvement, why drift back from the position we have gained by appealing to a *plebiscite* of general practitioners on the value of drugs founded on an experience of old and worthless preparations,—worthless, I mean, from a strictly scientific point of view? Rather let the pharmacologists and pharmacists know that their work is being faithfully and generously followed by one of their own acknowledged heads, in the interest of the medical profession, and we shall stimulate them to still better and greater results; and, what is more, we shall then hear less of the heart-burnings that pos-

sessed the pharmaceutical chemists in 1885 when denied what they considered their legitimate share in the production of our national Pharmacopœia.

PARIS.

(From our Special Correspondent.)

The dulness of summer has been enlivened by an extraordinary communication read before the Academy of Medicine by Dr. Luys, one of its members for the Section of Anatomy and Physiology. The learned academician appears to have gone very far into the *mysteries of hypnotism*, so far, indeed, as to have nearly lost his way. Having repeated Drs. Bureau and Bourn's experiments, and given them more precision by means of photography, Dr. Luys has come to the conclusion that an hypnotized subject can be influenced by medicinal substances held in stoppered bottles, and simply placed in contact with the back of his head. Morphine, for instance, when applied to the left side of the occiput, will cause intense terror and irritation; but, on shifting the vial to the right side, the sedative and pleasurable effects of the drug will readily be observed. Instantaneous photographs of the subjects while under such influences strikingly illustrate the feelings experienced in the case of morphine, as well as the other drugs experimented with. The photos were circulated among the listening academicians. To proceed with the list,—Dr. Luys spoke of eighty-five drugs,—strychnine on the left side will occasion contractions, convulsive starts, etc.; on the right, exhilaration and great enjoyment. With stimulants, such as cognac, rum, champagne, etc., the subject will become stimulated at first, then very gay, and finally so tipsy as to be hardly able to stand, and all that with half an ounce or so of cognac in a vial only touching the head. Dr. Luys forgot to tell his hearers what difference it would make whether the liquor is placed on the right or on the left side. Valerian, haschisch, and other drugs had effects equally characteristic. But in all cases the subject stopped in the midst of the performance, in *statu quo*, when the inciting tube was removed. The most wonderful, however, is still to come. If, said Dr. Luys, in substance, by means of certain drugs, acting purely physically, hypnotized persons can be made to experience such deep perturbations, have their respiration suspended, their nervous centres congestioned, their cardiac action disturbed, the experimenter may possibly run the risk of causing death through some imprudence. And should such experiments be conducted by guilty hands, what series of dark crimes may not be committed with impunity, no material proof of the act remaining to bring home a conviction? The sensation caused among academicians by so startling a communication may well be imagined. Some felt as if they had been brought centuries back into the dark ages, while others uttered mild protests of incredulity. The academy having, after a while, regained its composure, decided to appoint a committee to investigate and scrutinize the facts thus brought to its knowledge, a procedure unusual with a member of the learned body, but warranted by the nature of the communication.

As was to have been expected, the medical world outside have shared the sensation and discussed the paper. Already a physician, well known for his familiarity with nervous phenomena and hospital subjects, having recognized from the photographs the one he calls Dr. Luys's star performer, has declared he knows the woman well as a very nervous, hysterical patient, of keen intelligence, and very apt to deceive both herself and any one taking her for a subject of experiments. In fact, the difference between the effects produced by the same substance, when applied to the right or to the left side of the head, reminds one very much of the well-known phenomena of *suggestion*. The subject guesses one thing is expected of her when the glass tube is on the right and another thing when it is shifted to the left, and, in perfect good faith, she will act accordingly.

But, to pass from the supernatural to the real concerns of this material world, physicians are still discussing the question whether *animal vaccine* should not altogether supersede the *humanized virus*, so as to avoid syphilitic contamination. The arguments for and against are too well known to be here repeated, but in the course of his recent lectures at the Hôpital St. Louis, Professor Fournier thus illustrated the difficulty of ascertaining the soundness of the subject supplying the humanized virus. Some fifteen days ago, he said, a gentleman from a country town, married, and the father of a family, came to consult him about secondary syphilitic accidents in the mouth, the result of an amorous escapade. Husbands will do it, even in virtuous America. Proper treatment was prescribed, and the sores were cauterized, the

recommendation being added to have the same done again by his family physician. "Impossible," said the patient; "I can neither go to his office nor ask him to call at my house. Still less can I go to the pharmacist's to have your prescription dispensed." "But, why?" "Because, should the physician call, my wife would want to know what for. On the other hand, should I go to his office, the whole town would know of it, and place on the step the worst possible interpretation, unfortunately too true in my case. As to the medicines, it would be more awkward still. Your prescription would be lying loose about the pharmacy, to be looked at by all the country folks who step in on market days.* Moreover, it is the pharmacist's wife who writes up the bills and accounts, and she would be sure to tell the whole town of my scrape within twenty-four hours." Thus, added Professor Fournier, the family physician of such a patient, being carefully kept from knowing the gentleman's condition, may take vaccine from a child of the family, well convinced nothing is amiss, and so run the risk of propagating syphilis right and left. What may really be the percentage of danger is a question for others to determine; but certain it is that many American physicians must have had similar experience to that related by Professor Fournier.

The physiological effects of *Cytisus laburnum* have been investigated by Drs. J. L. Prévost and Paul Bruet, whose memoir, just read before the Academy of Sciences, brings out the following facts: The parts of the plant experimented with were the flowers, then the green pods, and finally the dry seeds. One point of pharmacological interest may be incidentally noticed,—namely, that *the aqueous extract of the seeds is more active than the alcoholic*. The animals practised upon were frogs, cats, dogs, rats, guinea-pigs, rabbits, and pigeons. With frogs the drug paralyzes the motor nerves, precisely like curare. The animal dies of heart-paralysis. The warm-blooded animals that can vomit are more affected than the rodents are, especially the rabbits. The last are remarkably proof against the effects of laburnum, an immunity that will astonish no one on the part of an animal which feeds with impunity on hyoscyamus and belladonna-leaves. With animals that can vomit, the emetic action is produced with very small doses, 5 centigrammes ($\frac{5}{6}$ of a grain) of the aqueous extract being sufficient for a cat. The effect occurs within fifteen or twenty minutes of the administration through the stomach, and within six minutes when the drug is given hypodermically. The vomitings were accompanied with violent efforts, but no other symptoms were observed, and no intestinal trouble or diarrhœa. With larger doses general weakness and prostration are produced, hitherto attributed to a narcotic action, but thought by Drs. Prévost and Bruet to be due to a general paralysis of the motor nerves, which ends in death by asphyxia, unless artificial respiration be resorted to. The bilious secretion, and the pupil and cornea of the eye, remain unaffected by laburnum; the same is true of the heart in the case of warm-blooded animals. The conclusions of the memoir are that (1) laburnum may be considered a good emetic, acting promptly, especially when administered hypodermically; (2) with large doses the emetic effect is accompanied by a paralysis of the motor nerves similar to the action of curare, if not identical with it.

The *history of the mustard-leaves*, now so frequently employed, offers some interest, because it shows how discoveries are gradually evolved, and how the man who really finds out the cardinal principle of an improvement is not always the one to profit by the invention, while another, only adapting to it some known device which facilitates its application, will often reap the benefits and attach his name to the discovery. M. P. Vigier, an old and experienced Paris pharmacist, has related the inside history of the mustard-leaves aforesaid. It seems it was Hurant who found first that when mustard flour has been freed, by either pressure or solvents, of its fixed oils, it becomes unalterable on keeping, and considerably more active. But this important discovery was not taken advantage of until long after, when Boggio, another Paris pharmacist, determined to spread a thin coating of the "lean" mustard flour over a paper painted with a thick solution of gum arabic, and to cover the whole with thin muslin, to keep the composition in place. The mustard-leaf may be said to have been then complete, if not perfect. It answered the purpose well. Some improvements only were needed, and they would have come in time had Boggio understood the value of advertising, and thus obtained the pecuniary means and incentive to perfect his preparation. As it was, the dry sinapism dragged along a melancholy

* A French physician's prescription is often a voluminous document, containing many details and directions, besides the formula proper, and all in French.

existence, when Rigollot conceived the idea of substituting for the gum arabic a solution of india-rubber, such as had long been known in industry for waterproofing fabrics. The improvement was undoubtedly an important one, but the chief merit of Rigollot is to have understood his period and vigorously advertised his preparation. This short story bears its own moral.

As a correspondence from Paris would hardly be complete without some reference to *phthisis*, a new cure for consumption will end the present communication. The treatment this time consists in *inhalations of hydrofluoric acid*. Dr. Garcin, in a memoir read on September 20 before the Academy of Medicine, said that the physicians of the Baccarat and Saint-Louis plate-glass factories have for some time observed the beneficial effects experienced by phthisical workmen from exposure to the fumes of the acid. Hydrofluoric acid, both liquid and gaseous, is largely used in the factories for plate-glass engraving, and notwithstanding all ventilating precautions, the gas more or less permeates the workshops. The treatment, based upon this observation, consists in placing the patient in a closet of six cubic metres capacity (about two hundred and fifty cubic feet), where he is to remain for an hour every day. The air of the closet is impregnated with acid fumes by pumping into it a known volume of air run through a twenty-five per cent. watery solution of hydrofluoric acid. The dose varies according to the case. Consumptives of the first degree easily stand twenty litres of acidified air to the cubic metre, which corresponds to two per cent. in volume; for the second degree, fifteen litres are enough; and for the third, ten litres only, and even then it is advisable to run the medicated air through a washing-flask containing some six ounces of water, so as to moisten the atmosphere of the closet and moderate the effects of the acid. Dr. Garcin reports a good percentage of cures by his treatment,—some thirty-five per cent., which he attributes to the destruction of the tubercle-bacilli by the direct action of the acid. However this may be, it must be admitted Dr. Garcin's method is in accordance with the modern theories respecting tuberculosis.

One word more. French delegates to the Washington Congress are beginning to come home, well pleased with their experience and the cordial welcome they received in the American capital. Some speak highly of their reception in Philadelphia and their visit to the Philadelphia Hospital, over which they grow quite enthusiastic.

PARIS, September 28, 1887.

THE DANGERS OF SANTONIN.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—From time to time I see in the GAZETTE reports on the action of santonin, which, in connection with my own experience, makes me doubtful of its harmlessness as an anthelmintic.

I have been using it upwards of twenty years; many a time when strong symptoms of worms were present have administered santonin, and the signs of worms disappeared and the child became well, and yet no worm was seen. It is true I have nearly always exhibited the drug with the old almost universal calomel.

I have often met with cases of remittent and intermittent fevers in which the positive evidence of worms was present. In such cases have uniformly opened treatment with calomel and santonin in sugar, followed quickly with castor oil and spirits of turpentine. In such cases as the above I often note a marked disposition to convulsions at once, and at last to gastro-enteric or verminous fever. I have several times seen cases of obstruction of the bowel caused by the winding together of the dying worms caused by the use of santonin, and nervous and spasmodic trouble soon supervened. I have thought that the use of santonin for the riddance of worms was more liable to such misfortune than any other vermifuge that I have used. Before I ever used santonin, and in the employment of other worm-destroyers, I have often found a great variety of nervous symptoms and very threatening indications to arise as soon as the worms were disturbed or destroyed. Have not all practitioners, whether in the use of santonin or some other worm-medicine, encountered some strange departures from the usual course of verminous disease? A malady that can cause night-terrors with all its phantasmagoric visions can also produce blindness, and has done so often when the stomach and brain have been long in morbid reciprocity by the presence of worms in the stomach. We may not be surprised at heart-symptoms resembling the action of a powerful heart-depressant, or any other death-symptom which may have direct relation to the stomach or brain.

My first use of santonin was in my own son, 6 years old. He had night-terrors. I exhausted the catalogue of anthelmintics and tonics, mineral and vegetable. He got no better, but worse, until his frights at the sight of familiar friends at times threatened convulsions, and then temporary blindness was increasing in duration. I gave him santonin, per mouth and per rectum, morning and night, 3 grains each way. No worms appeared, and yet his night-terrors stopped to return no more. A young man, 21 years old, clerk in a drug-store, had night-terrors, and consulted me on the subject. I ordered santonin and calomel each night for two nights. He laughed and said he was not wormy, and for a time refused to take the prescription; but at last he did take it, and his terrors ceased, though no worms appeared.

I have had better success with santonin in the treatment for worms than any other vermifuge that I have used; have had as few strange departures from what is common to verminous diseases under its use as under any other worm-medicine that I have used. I do hope its medicinal properties and therapeutics will soon be settled.

THOS. H. STEWART.

TREATMENT OF EPISTAXIS.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—For the past five or six years I have practised exactly the same treatment in epistaxis as that recommended by Dr. J. Robinson, of Manhattan, Kansas, on page 568 of vol. xi. of the GAZETTE. In every instance the treatment has been entirely successful. I am unable to tell at the present time from what source I received the idea.

Yours truly,

F. W. PUTNAM, M.D.

BINGHAMTON, N. Y.

"THE NEW REMEDY FOR NIGHT-SWEATS."

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—I have just read the article of Dr. Fliesburg in the September number of the THERAPEUTIC GAZETTE. It seems that the doctor is highly incensed that I should have occupied a small space in your journal to call the attention of the profession to a remedy for night-sweats. He should be glad, however, that I did so, because it has given him the opportunity to abuse me and to air his chemical knowledge. Education and politeness should go hand in hand: the doctor seems to possess the first to an eminent degree, Ph.G., M.D. Now, I did not mean to be personal to the doctor in my article: I did not know that Oscar Alf. Fliesburg, Ph.G., M.D., existed. If, however, he has in the course of his practice used medicines discovered by others, and claimed for himself the honor of discovering them, and therefore feels hurt that I said in my article that this had been done by members of the profession, and I thus hit him unawares, why, I am truly sorry. It seems to me, however, that before criticising me and the remedy I proposed he should have at least given it a trial, and if on doing so it had failed to accomplish the end, then he could have said, "I have tried it and it will not do what Dr. Pope claims for it." I have used the cinquefoil in a case since the publication of my article, and it has again proven successful. The profession I hope will give it a trial notwithstanding Dr. Fliesburg's article, and I hope that the doctor will do the same.

Very respectfully,

SAMPSON POPE, M.D.

NEWBURY, S. C., October 1, 1887.

Notes and Queries.

THE THERAPEUTIC VALUE OF OLEUM HYOSCYAMI AND OF OTHER "OLEA COCTA."

As is well known, the oleum hyoscyami and other "oils" of narcotic herbs are merely olive oil (or some other bland fatty oil) which has been impregnated by heat or other means with whatever constituents were soluble in the oil. Generally more stress has been laid upon the appearance of these preparations than upon their alkaloidal contents, a handsome green color being above all highly prized.

MR. DIETERICH has recently examined some of these products, made by himself with all possible care. Having previously analyzed the extract made from the same hyoscyamus which was utilized in the preparation of the "oleum hyoscyami," and having found this to contain at least 0.75 per cent. of hyoscyamine, he ascertained that a corresponding portion of the oil contained only

about one-fifteenth of this quantity of alkaloid. Before describing his *modus operandi* in the assay of the oil, we will give a brief abstract of his method of assay of extract of hyoscyamus and of other extracts :

Triturate 0.2 gm. of powdered lime, made by ignition from marble, with 3 gm. of water, and mix this well with 2 gm. of the extract to be examined (assuming it to be either belladonna, conium, aconite, or hyoscyamus). When it is dissolved, add 10 gm. more of powdered lime, and rub until a dry powder results. By means of a continuous extraction apparatus extract the mass, packed in a little glass cylinder, with ether. In the case of belladonna, aconite, and hyoscyamus the extraction will be completed in about forty-five minutes. In the case of conium, at least two hours will be required. To make sure, the extraction with ether ought to be repeated. Transfer the ethereal solution to a capsule, rinsing the flask in which it has been contained with ether. Add 1 c.c. of distilled water and evaporate the ether carefully on a water-bath at a temperature not exceeding 30° C. (86° F.), taking care that no vapors of any volatile acid (nitric, hydrochloric, acetic, etc., acid) come in contact with it, to prevent even the slightest trace of the respective alkaloids from being neutralized. Dissolve the final residue in 0.5 gm. of diluted alcohol (sp. gr. 0.892), dilute the solution with 10 c.c. of distilled water, add 1 or 2 drops of rosolic acid solution (1 to 100 alcohol), titrate with $\frac{1}{100}$ normal sulphuric acid,—that is, such as contains 0.049 gm. of H_2SO_4 in 1 litre, or of which 1 c.c. contains 0.00049 gm. of H_2SO_4.

Each cubic centimetre of this acid neutralizes, respectively, according to the author,—

0.00289 gm. of atropine or hyoscyamine.

0.00523 gm. of aconitine.

0.00127 gm. of coniine.

For extract of belladonna, the author had found the results to vary between 1.142 and 1.184 per cent. in alkaloids.

Extract of aconite, between 1.252 and 1.305.

Extract of conium, 0.589 to 0.622.

Extract of hyoscyamus, 0.551 to 0.780 per cent.

Coming back now to the oleum hyoscyami, we will give the process followed by the author in assaying it.

500 gm. of the oil were shaken with four successive portions of 200 gm. of alcohol mixed with 4 drops of diluted sulphuric acid. The united liquors were filtered and evaporated on a tared capsule at a gentle heat (not exceeding 60° C. = 140° F.) until the residue amounted to 10 gm. This was mixed with 50 gm. of water in a test-tube, the mixture well shaken, filtered through a wetted filter, and the residue left behind once more treated in the same manner. The united acid filtrates were again evaporated below 60° C., triturated with 2 gm. of powdered lime, afterwards with 10 more gm. of the same, and the mixture extracted with ether precisely as described in the preceding process. The ethereal extract was evaporated to 1.5 gm., mixed with 0.5 gm. of diluted alcohol (0.892), and then with 10 gm. of water. Next, 1 drop of solution of rosolic acid was added, and, lastly, enough of the $\frac{1}{100}$ sulphuric acid, of which 3.5 c.c. were consumed, which correspond to 0.010115 gm. of hyoscyamine in the total 500 gm. of the oil.

Diederich states correctly that the process followed in making these oils from narcotic herbs is faulty in this,—that the alkaloids are not set free from their salts so as to enable them to be dissolved by the oil. He therefore proposes to set the alkaloids free by the use of ammonia, which has the further advantage that it greatly increases the brilliancy of the green chlorophyll color upon which so much weight is laid. He found that this use of ammonia increased the quantity of hyoscyamine contained in the oil to triple the amount present in the ordinary preparation. The process he recommends is as follows :

Mix 20 parts of water of ammonia (sp. gr. 0.960) with 750 parts of alcohol, moisten with it 1000 parts of coarsely-powdered hyoscyamus-leaves, firmly press the damp powder in a porcelain vessel, tie parchment-paper over it, and let it stand twelve hours. Next, transfer it to a large porcelain vessel, pour upon it 5000 parts of olive oil, stir well, and heat it, under occasional stirring, upon a steam bath, at a temperature of 50° to 60° C. (122° to 140° F.). Then express and filter. A higher temperature results in loss of alkaloid. —After *Rundschau* (Prag), No. 17 ; *American Druggist*, July, 1887.

PAPAYOTIN IN FISSURES OF THE TONGUE.

SCHWIMMER (*Wiener Med. Woch. ; Nouv. Remèdes*) has succeeded in the treatment of fissures of the tongue with papayotin after failure with chromic acid, iodoform, and nitrate of silver. He used a solution of from 1 to 2 parts of papayotin in 10 parts each of

glycerin and distilled water, applied five or six times a day, the fissure being previously well dried. No maceration takes place, but the pain is stopped and the epithelium renewed. The treatment was used in twenty-five cases, all of which were completely cured, except one, which was of a syphilitic nature, and in that case, although antisyphilitic treatment had failed, amelioration followed the use of papayotin.—*New York Med. Journ.*

THE DIGESTION OF CARBOHYDRATES.

The paper of Ellenberger and Hofmeister, recently published in *Biedermann's Centralblatt*, contains a summary of their long-continued researches on this subject. They have experimented upon the horse, and their conclusions are by no means identical with those that have hitherto been received. An abstract, by MR. J. FLETCHER, of this important paper appears in the current number of the journal of the Chemical Society; and it is so lucid and concise that we reproduce it almost *in extenso*.

"The action of saliva in the process of mastication is shown to be more mechanical than chemical. The quantity of saliva used depends on the dryness and roughness of the food rather than its contents in starch; and the authors think that the chemical activity of saliva owes much to spores, which, floating in the atmosphere, mix with the food and assist in the fermentation process. A digestive action of the mixed food takes place in the stomach when the acidity due to hydrochloric or lactic acid does not exceed 0.03 to 0.04 per cent. The left section of the stomach of the horse does not secrete a gastric juice; this is the function of the right portion. The pure gastric juice of the horse contains lactic, fatty, and amylaceous ferments,—the latter in small quantities. Cellulose is not digested in the stomach of the horse, but muscle, fat, gelatin, and flesh generally are easily digested, bone and elastic tissues more slowly. Pepsin operates actively only when acids are present, about two per cent. of lactic acid or 0.2 per cent. of hydrochloric acid being necessary. The activity of pepsin does not increase in proportion to its quantity after reaching a certain point, but it rather becomes injurious. The acid which appears first in the digestive process is lactic acid, and later hydrochloric; at the time of greatest activity lactic acid is present in the upper and lower extremities of the digestive tract, hydrochloric acid being found in the intervening part. The digestion of starch in the stomach of the horse lasts for about two hours; that of albuminous matter takes place later, and occupies three or four hours after the eating of the food. The drinking of water immediately after food does not appear to hinder digestion. The secretions of the intestinal canal unite in themselves all the properties of the gastric juice, and can act as a substitute for it, and are particularly energetic in the decomposition of fats. The duration of the digestive process in the horse is long, lasting almost three days. A very active lactic fermentation of sugar takes place in the stomach and intestines, but the authors do not say that all the sugar which is lost in the course of passage is lost in that way; it is more probably reabsorbed."—*Lancet*, August 27, 1887.

CHANGES IN MILK PRODUCED BY FREEZING.

KAISER and SCHMIEDER experimented with two samples of milk, freezing one slowly, the other quickly, and afterwards partially thawing them. In the former case the ice contained the greater part of the fat, and the fluid portion most of the casein, milk-sugar, and salts. In the quickly-frozen and partially-thawed sample the fat was equally distributed between the solid and fluid portions; the author explains this by the fat-globules rising to the top when the process of freezing is gradual; they thus become embedded in the flakes of ice, whilst in quickly-frozen samples this cannot take place, and the fat is more evenly distributed. If a dealer whose milk has been frozen pours off the clear fluid which underlies the ice, he is liable to the suspicion of adulteration on the one hand, or will deliver milk above the standard on the other. Milk which has been frozen should be well thawed and shaken up, and not sold whilst any ice is visible.—*The Pharmaceutical Journal and Transactions*, September 10, 1887.

ACETANILIDE.

In an interesting article in the *Centralblatt für Gesammte Therapie*, by DR. GABRIEL PAVAI-VAJNA, concerning the use of acetanilide, or antifebrin, the author asserts the superiority of antipyrin over antifebrin, and also speaks of the importance of giving the

drug in small doses. He sums up his experiences with antifebrin as follows:

1. Antifebrin in small doses will be found to actively reduce the temperature. A dose of 0.25 to 0.50 centigramme (3¾ or 7½ grains) will reduce a high temperature from 1° to 4° C. Care, however, should be exercised, as in some weak patients 0.25 centigramme has been known to cause collapse, and, again, in other cases, 1 gramme has had no effect.

2. The fall of temperature will begin in one to three hours after taking the drug, and will remain down for two to four hours, and in most consumptives from eight to ten hours. The temperature will then rise quickly, without, however, any accompanying chills.

3. In nearly all cases slight perspiration occurs, rarely collapse or cyanosis.

4. Antifebrin has no effect on the respiration. The pulse usually decreases with the temperature, although not always proportionately.

As antifebrin, even when given in large doses, has no effect on the heart's action, it can, therefore, be given to those fever cases who have heart-failure or the like, when antipyrin or salicylic acid would be dangerous.

5. Antifebrin seemingly affects but slightly the digestive organs. Even when thirty to forty doses were given daily no nausea, vomiting, pain, purging, or dizziness was experienced.

6. Antifebrin is given with the greatest certainty and best results in articular rheumatism and phthisis pulmonaris. In rheumatism it is of equal value with salicylic acid, and in phthisis it is superior to quinine, and in some cases superior to antipyrin.

CARBOLIC ACID AS A SAFEGUARD AGAINST INSECTS.

Many people do not know how easily they can protect themselves and their children against the bites of gnats and other insects. Weak carbolic acid sponged on the skin and hair, and in some cases the clothing, will drive away the whole tribe. A great many children and not a few adults are tormented throughout the whole summer by minute enemies. We know persons who are afraid of picnics, and even of their own gardens, on this account. Clothing is an imperfect protection, for we have seen a child whose foot and ankle had been stung through the stocking so seriously that for days she could not wear a leather shoe. All this can be averted according to our experience, and that we believe of many others, by carbolic acid judiciously used. The safest plan is to keep a saturated solution of the acid. The solution cannot contain more than six or seven per cent., and it may be added to water until the latter smells strongly. This may readily, and with perfect safety, be applied with a sponge. We have no doubt that horses and cattle could be protected in the same way from the flies, which sometimes nearly madden them, and it even seems possible that that terrible scourge, the African Tsetse fly, might be kept off in the same manner.—*The Lancet*, June 25, 1887.

TWO NEW ALKALOIDS OBTAINED FROM THE BARK OF THE ARTAR-ROOT.

Giacosa and Monari, who have examined the bark of this plant, which inhabits the eastern coast of Africa, gave the following as the result of the examination: If a small piece of the bark is retained in the mouth it produces a sensation similar to that occasioned by the application of the poles of a constant current. By extracting with petroleum ether they separated a heavy, fatty oil, not crystallizable, with the taste above described, and a cholesterin which melts at 120° to 130°. By suitable treatment of the alcoholic and ethereal extract they obtained two entirely different alkaloids. One occurs in greater quantity, soluble in ether, insoluble in water, non-crystallizable, forming yellow salts with sulphuric, nitric, and hydrochloric acids, and does not show the reactions of berberine. It was critically examined in some of its combinations, and isolated, but its formula has not yet been determined. The second alkaloid exists in small quantity, crystallizes in beautiful red tablets, is soluble in water, and also yields yellow salts with acids. It was not subjected to further analysis. The physiological effect of the first alkaloid is not unlike that of veratrine. Its action upon the heart manifests itself in reducing the rapidity of the contractions with apparent increase of the force. The heart resists the action of this alkaloid for some time. Nothing is said of the action of the second alkaloid. —*Intern. Klin. Rundsh.*, 1887, 27; *Pharm. Record*, August, 1887.

THE DANGERS OF ANTIPYRIN.

Our remarks in the preceding number of the Gazette as to the dangers of antipyrin have received confirmation in a note published by the Paris correspondent of the *British Medi-*

cal Journal (August 20, 1887). The instance he refers to occurred in the practice of Dr. Bernouillé, of Basle. The patient was a strong, well-nourished woman, aged 52, suffering from chronic rheumatic arthritis of about three months' standing. During the first week of the antipyrin treatment she took 15 grammes, the daily dose varying from 2.5 to 4.0 grammes (37½ to 60 grs.). This was well borne. Subsequently, however, on three different occasions, the administration of a 1-gramme dose of antipyrin was followed in three or four minutes by severe pain in the chest and abdomen, mental anxiety, cold perspiration, followed by rapid rise of temperature, reaching to 39.2° and 40.2° C. The pulse was 120 and full; there was vomiting, with swelling and redness of the face, and an erythematous rash all over the body. These symptoms gradually disappeared a few days after discontinuing the remedy. Similar cases have been reported by Drs. S. Laache in the *Centralbl. f. Klin. Med.*, vol. vii., 1886, p. 32, and A. Fraenkel in the *Deutsche Med. Wochenschr.*, No. 49, 1886.

ALKALINE MERCURIAL SOAP AS AN ABSORBENT.

Dr. Svetukhin, chief of Professor Lashkevich's clinic in St. Petersburg, in some therapeutic notes contributed to the *Russkaya Meditsina*, mentions that various preparations have been recently employed in the wards for the purpose of promoting absorption of pleuritic effusion. Iodine ointment is too mild and too slow in its action to answer the purpose, and the odor of iodoform ointment is so strong that it interferes too much with the comfort of the other patients, and so is found to be unsuitable for hospital practice. It was found that iodine ointment could be advantageously supplemented by soft soap (sapo kalinus viridis) inunctions, or by rubbing in unguentum hydrargyri. The most valuable of all applications for this purpose was, however, found to be a preparation called sapo kalinus hydrargyrosus, which is made by mixing in certain proportions metallic mercury, unguentum hydrargyri, caustic potash, and olive oil, so that the resulting soap contains a third of its weight of mercury, the unguentum hydrargyri of the Russian Pharmacopœia containing half its weight of mercury. This is agitated with hot water so as to form a good froth and lightly rubbed into the skin. It has the advantage over unguentum hydrargyri in being much more easily rubbed in, in not irritating the skin, and thus causing eruptions, and, lastly, in not so rapidly setting up stomatitis or salivation. From half a drachm to a drachm of this mercurial soap is used for each inunction. After from six to ten applications some diminution may be detected in the effusion, and after twenty inunctions the whole is usually found to have disappeared. Of course, favorable results can only be looked for in cases of simple effusion: they cannot be obtained in empyema.—*Lancet*, August 6, 1887.

CYANIDE OF ZINC IN CARDIAC AFFECTIONS.

Cyanide of zinc exerts, according to Professor Lashkevich, a beneficial effect on some cardiac cases which cannot be obtained by other means. In cardiac neuroses it acts quickly and certainly. Palpitation, want of rhythm, and pain in the region of the heart are quickly affected, sometimes indeed cured, by this drug. The dose is from $\frac{1}{10}$ to $\frac{1}{8}$ of a grain three times a day. Similar beneficial effects are produced when there is organic cardiac disease. The regulating action of cyanide of zinc in valvular insufficiency is less marked than its effect on cardiac neurosis; nevertheless, there were cases in the wards where it acted better than other cardiac remedies, as digitalis, convallaria majalis, adonis vernalis, etc. In this respect it acted particularly satisfactorily in cases where other remedies could not be given without producing derangement of the gastro-intestinal system. Here it improved the action of the heart, thus increasing the secretion of urine, moderating the pulse, and diminishing the dropsy due to irritation of the gastro-intestinal canal. In a case of nervous palpitation with hysterical anuria, cyanide of zinc diminished the palpitation, and at the same time caused the secretion of urine to recommence.—*Lancet*, August 6, 1887.

A CONVENIENT PRESCRIPTION FOR THE ADMINISTRATION OF PHOSPHORUS.

Saltmann has found oil of almonds an especially good medium for the use of phosphorus, and prescribes as follows:

℞ Phosphori, gr. ½;
Ol. amygdalar., ʒiiss;
Aquæ dest., ℥iiss;
Gummi arab., ʒiiss. M.
Ft. emul.
Sig.—Dose, 1 teaspoonful.

—*Therapeutische Monatshefte*, Heft 5, 1887.

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